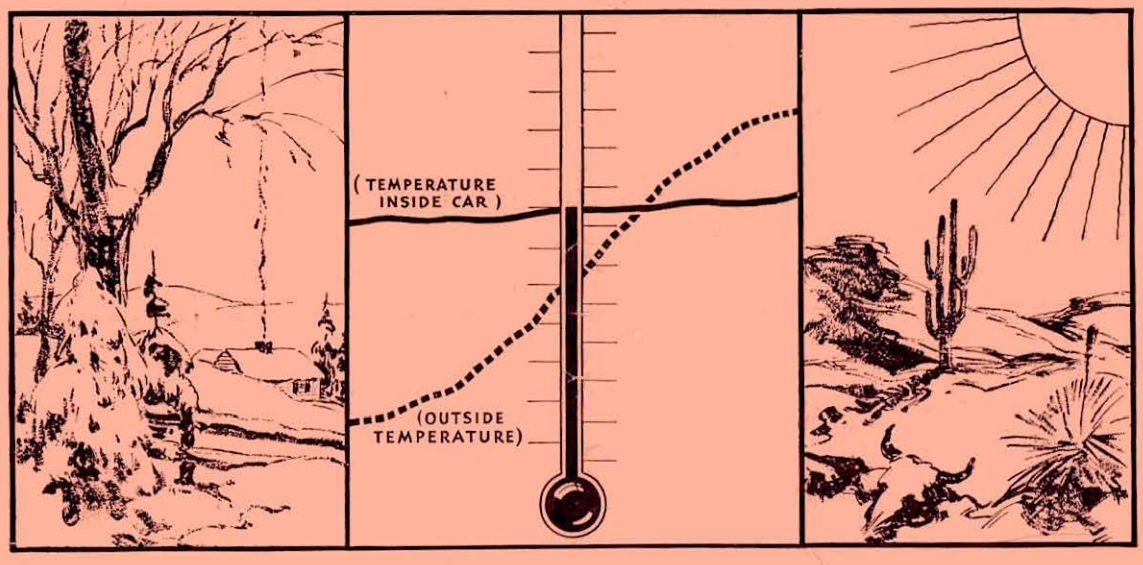
NOVEMBER 21, 1931

Railway Age

FOUNDED IN 1856

COLLEGE LIBRARY,
BEAVER FALLS, PA.

AIR CONDITIONING



UNIFORM temperature in your passenger cars with the relative humidity automatically regulated, regardless of weather conditions outside—in either winter or summer—is now possible with correctly designed air conditioning equipment. • We have developed such equipment and installed it in passenger cars. It has been giving satisfactory service during the past year. Proper consideration has been given to certainty of operation, weight, and simplicity. • Our next advertisement on this subject will appear in the following issue.

PULLMAN CAR & MANUFACTURING CORPORATION

BUILDERS

General Offices: Chicago, Illinois

Pacific Coast Sales Office:
2910 RUSS BUILDING
San Francisco, Cal.

Washington Sales Office:
805 MUNSEY BUILDING
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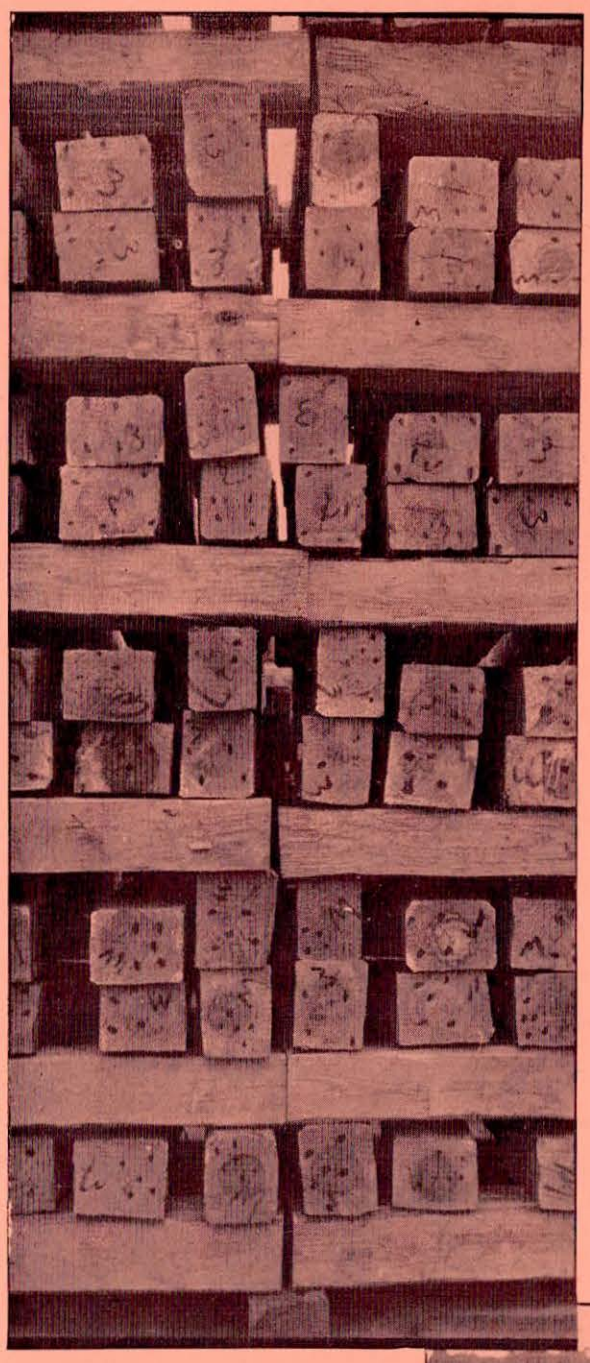


SEASONING
that prevents decay and adds years to tie life

WHEN you purchase ties—consider the source as well as the price. How and where the ties are seasoned is vitally important.

When ties are left to season in the woods or on the right-of-way where it is wet and weedy—they will decay and rot rapidly. A few cents may be thus saved in handling expense but tie life is reduced 25 to 50 per cent.

Dry, clear ground, plenty of sunlight and air are essential to proper seasoning. For these reasons *International* removes its ties from the woods immediately and ships them to specially built seasoning yards which are graded, tile drained, and free from vegetation.

Then the ties are stacked openly on creosoted supports high above the ground; with wide air-spaced and minimized surface contacts between them. Each stack is surrounded by wide alleyways so that the ties receive maximum sunlight and circulation of air. Under these conditions they dry rapidly, uniformly and thoroughly.

All the while, the ties are under constant supervision to prevent infection by fungi. Moisture samples are taken at regular intervals for the purpose of preventing overseasoning and to determine by laboratory tests when the ties are ready for treatment.

These precautions and extra care cost a few cents per tie. But they are necessary. Only where such scientific methods prevail, can you get real sound timber.

International

CREOSOTING & CONSTRUCTION CO.

PRODUCERS OF HIGH GRADE TREATED TIES

Galveston - Beaumont - Texarkana

This method of stacking provides wide air spaces and minimized surface contacts between the ties.

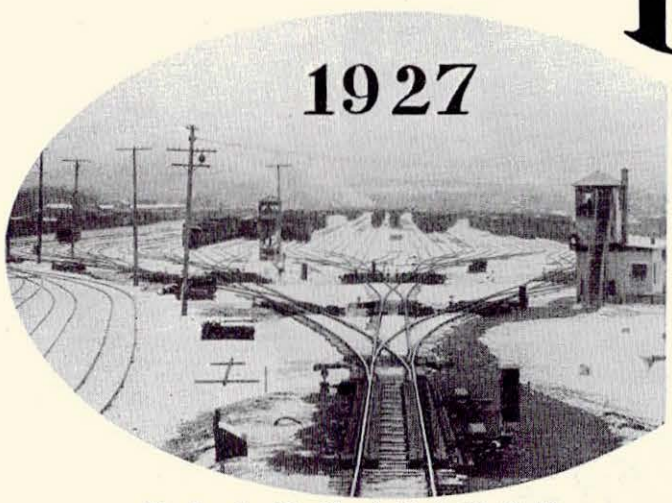
3¢1 The International Dating Nail

This dating nail is your assurance that the tie is a Standard A.R.E.A. Specification Tie.

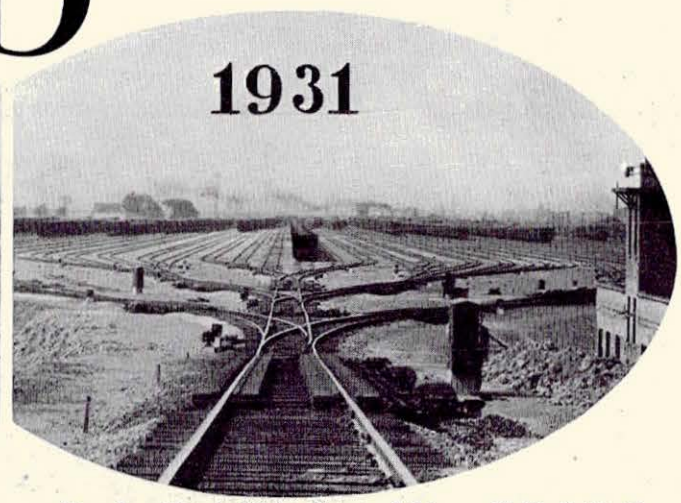
Full Size
Sound Timber
Properly Seasoned
Scientifically Treated

Published weekly by Simmons-Boardman Publishing Company, 34 North Crystal Street, East Stroudsburg, Pa. Entered as second class matter, March 9, 1928, at the Post Office at East Stroudsburg, Pa., under the act of March 3, 1879.
Address communications to 30 Church St., New York City.

A FOUR-YEAR SERVICE TEST WITH G-R-S TYPE "B" RETARDERS



Mechanicville Yard, B. & M. R. R.



Stanley Yard, Ohio Central Lines, N. Y. C. R. R.

In 1927, the first installation of G-R-S Type B Retarders was made at Mechanicville Yard of the Boston and Maine Railroad. After four years of service they have proven their ability to be maintained at an exceptionally low cost and the service rendered has been highly satisfactory.

In 1931, Type B Retarders were installed at Stanley Yard on the Ohio Central Lines of the New York Central Railroad. The same general principles of design, plus valuable improvements were incorporated in these retarders.

Within this period of time (1927-1931) a total of 14 yards operated by 7 different railroads have been equipped with Type B Retarders.

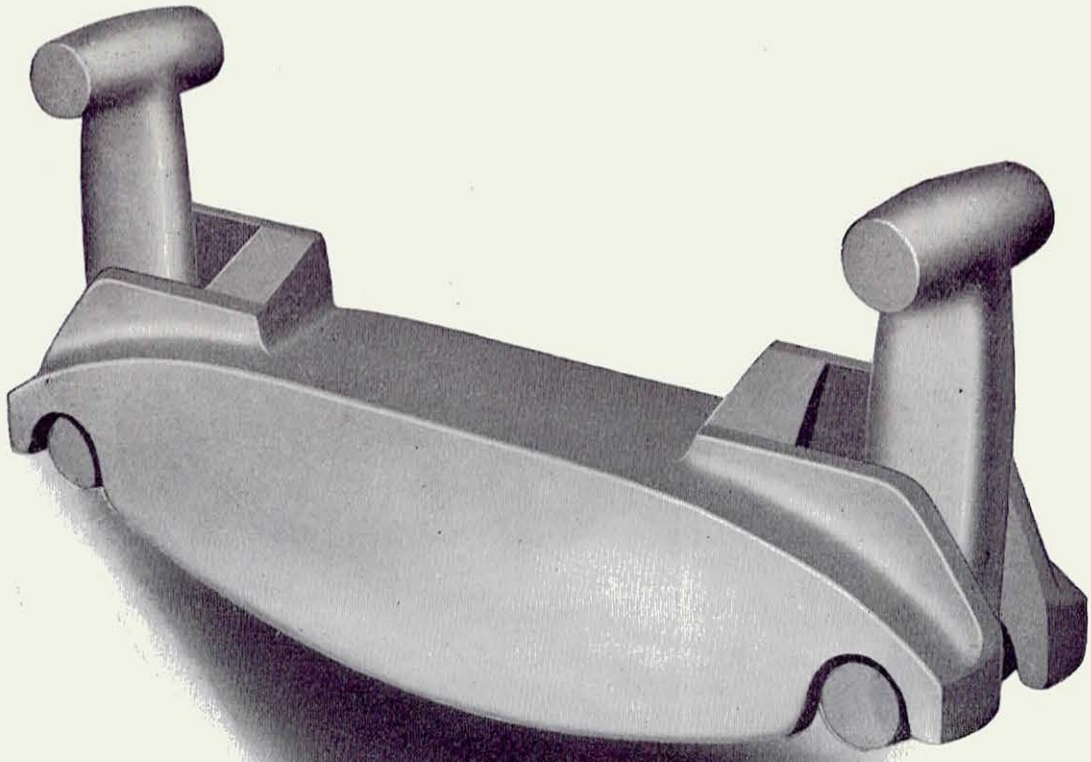
A few of the reasons for satisfactory service with low maintenance:—

(1) *Reliability* under all weather conditions and in emergencies such as failure in main source of power.

(2) *Economy in Operation* because of a low power cost. Power is used only in proportion to the work done. No power is used to hold the retarder in the retarding position. Conversion and transmission losses of power are a minimum.

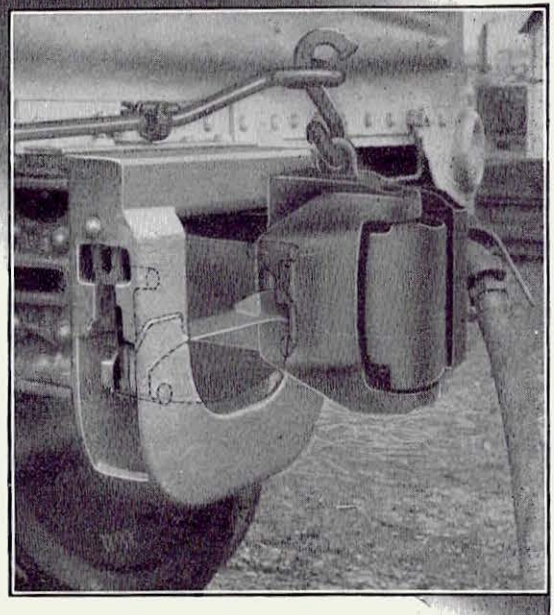
(3) *Economy in Maintenance* because of simplicity and ruggedness of design, accessibility to all parts of the assembly, easy tamping facilities and high grade workmanship in manufacture and installation.

GENERAL RAILWAY SIGNAL COMPANY
ROCHESTER, N. Y.
New York Chicago St. Louis A-864
Affiliated Companies' Offices: Montreal London Paris Tokyo Barcelona Melbourne Calcutta Buenos Aires



Primary Usage-

A swinging support is the fundamental merit of the Union Centering Device. It provides a frictionless carrier and keeps the coupler in its normal position.



UNION METAL PRODUCTS COMPANY

NEW YORK · CHICAGO · ST. LOUIS · WASHINGTON
RICHMOND · HOUSTON · SAN FRANCISCO · KANSAS CITY · MONTREAL

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Railway Age

With which are incorporated the Railway Review, the Railroad Gazette and the Railway Age-Gazette. Name Registered U. S. Patent Office

Vol. 91 November 21, 1931 No. 21

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New Line Built into Kansas City 783

A description of the joint double-track line, involving heavy grading and a novel method of placing fills, opened on July 1, between Birmingham, Mo., and Polo, 37 miles, by the Chicago, Rock Island & Pacific and the Chicago, Milwaukee, St. Paul & Pacific.

Railroads File Pool Plan 789

An outline of the plan offered by railway executives to the Interstate Commerce Commission, under which the increased revenues conditionally allowed by the decision in the recent rate case would be loaned rather than distributed outright.

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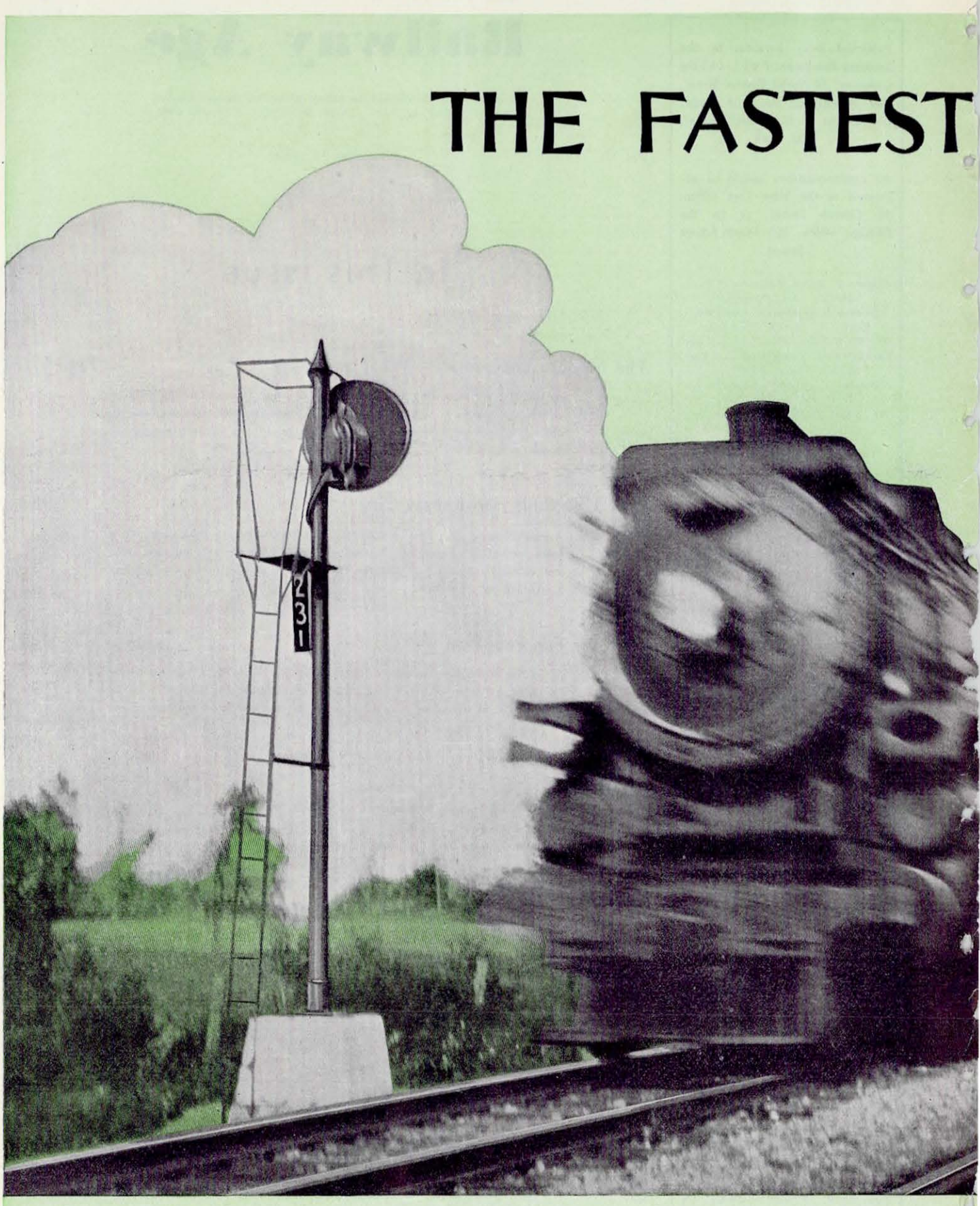
THE FASTEST



DISTRICT OFFICES

NEW YORK MONTREAL CHICAGO ST. LOUIS SAN FRANCISCO

TRAIN IN AMERICA ★

SPEED! Not for decades past has there been such activity in the realm of railway speed as during the last year. Month after month has witnessed fresh accelerations. And what an important factor modern signaling has been in this speeding of railway traffic; in signals that enable tremendous reductions in running time, yet in all cases maintain the safety of passenger and freight cargo and of the rolling stock itself. » »

"Union" Searchlight signals are doing just that for THE FASTEST TRAIN IN AMERICA, just as "Union" position light and color light signals are enabling other roads to shorten scheduled running time and to increase track traffic capacity. » » » » » » » » » »

"Union" engineers will be glad to discuss with you facts which will justify including an installation of "Union" signals in your 1932 budget. There is no obligation. » » »

★ *Details upon request*

1881 Union Switch & Signal Co. 1931

SWISSVALE, PA.

24 Liberty November 7, 1931

Take a Look at OUR

Another American Tragedy

Says THEODORE DREISER

(Reading time: 17 minutes 10 seconds.)

RAILROAD executives constantly reiterate and disseminate endless data to al... railroad ma... tenance divi...

...neighbor. I can avoid this obtrusion by undressing in a recumbent position, but that is quite a trick which I haven't mastered yet. And in Europe it isn't necessary. The extension of the partitions has also served the purpose of depriving me of the last breath of fresh air I used to get in the uppers. They are almost as hard to get into as they always were, and it has never occurred to the makers of them to ... out of a window to see ... was in the morning.

OF course, they couldn't be called *sleepers* in the first place. ... trip I spoke of before, there is a layover of an hour or so in the middle of the night at a junction point. Here, one would think, would be a chance to get a little nap; but that is the last place to expect some degree of quiet. If there is not a noisy switch engine panting and wheezing on the track alongside of you, there is a gang of employees shouting back and forth. And they call that railroading

But nothing that I know of now so aptly illustrates the lack of progress in railroading as the matter of bearings. Do you know what bearings are? If not, look them up in the dictionary! Yet, whatever they are, they are still lubricated in the same way we used to grease the old buggy. Yet only a short time ago one of the roads had an engine built with roller bearings, and the officials thought so well of themselves that they had their picture taken and published alongside of this wonderful new mechanical marvel. They were only thirty years behind the automobile! They have only progressed in one way. That is in price. They charge you more than they used to.

But now let us turn to freight and ask about that. I stepped into a garage in the western part of Pennsylvania a week or so ago as a large truck was pulling out. I asked the owner, a trucking man, where it was going. He told me it was going to the mill to get a load of finished textile materials to take to New York, where it would be delivered to the retailer at seven o'clock the following morning It used to go by truck to the railroad, then

You are wrong there, Mr. Dreiser

But of course you could hardly be expected to know all of the intimate inside history of railroad development, especially concerning such a highly technical subject as bearings.

As a matter of fact, Mr. Dreiser, American railroads are far ahead of those of any other country in the use of modern anti-friction bearings, as they are in other respects.

Have you never, by chance, heard of—or better still, ridden on—the "Olympian Limited" of the Milwaukee Road, running between Chicago and the Pacific Coast? 8 separate trains comprise the running schedule of this famous flyer, all equipped with Timken Tapered Roller Bearings.

The "Pioneer Limited" of the same road was the first Pullman train to be completely equipped with Timken Bearings.

Among other outstanding Timken-equipped trains we might mention the "Yankee Clipper" and the "Merchants Limited" on the New York, New Haven and Hartford R. R.

The Pennsylvania R. R. alone has 664 Timken-equipped units in service and production.

November 7, 1931 Liberty 25

RAILROADS

In all, 138 steam and electric railways are using Timken Bearings in various types of rolling stock.

American railroad executives have been anti-friction bearing minded for many years, but the task of producing a satisfactory anti-friction bearing for railroad service has not been an easy one, as we—who have been making roller bearings for over three decades—can testify. Developing roller bearings for automotive vehicles was child's play by comparison.

You see, Mr. Dreiser, there's a world of difference between automobiles running on air-shod wheels, and ponderous railroad trains with steel wheels operating on steel rails.

Consider the tremendous weight which railroad bearings have to carry—the terrific pounding they must withstand. Where bearing loads in automobiles are measured in pounds, they are measured in tons in railroad cars.

It has been the privilege of this Company to cooperate with leading American railroads over a period of years in perfecting a roller bearing to meet these extremely severe conditions.

The Timken heavy-duty railroad-type bearing solved the problem, resulting in greater riding comfort for passengers, with increased dependability and economy of operation for the railroads. Incidentally, hot boxes—one of the worst sources of train delays and high operating expense—have been abolished.

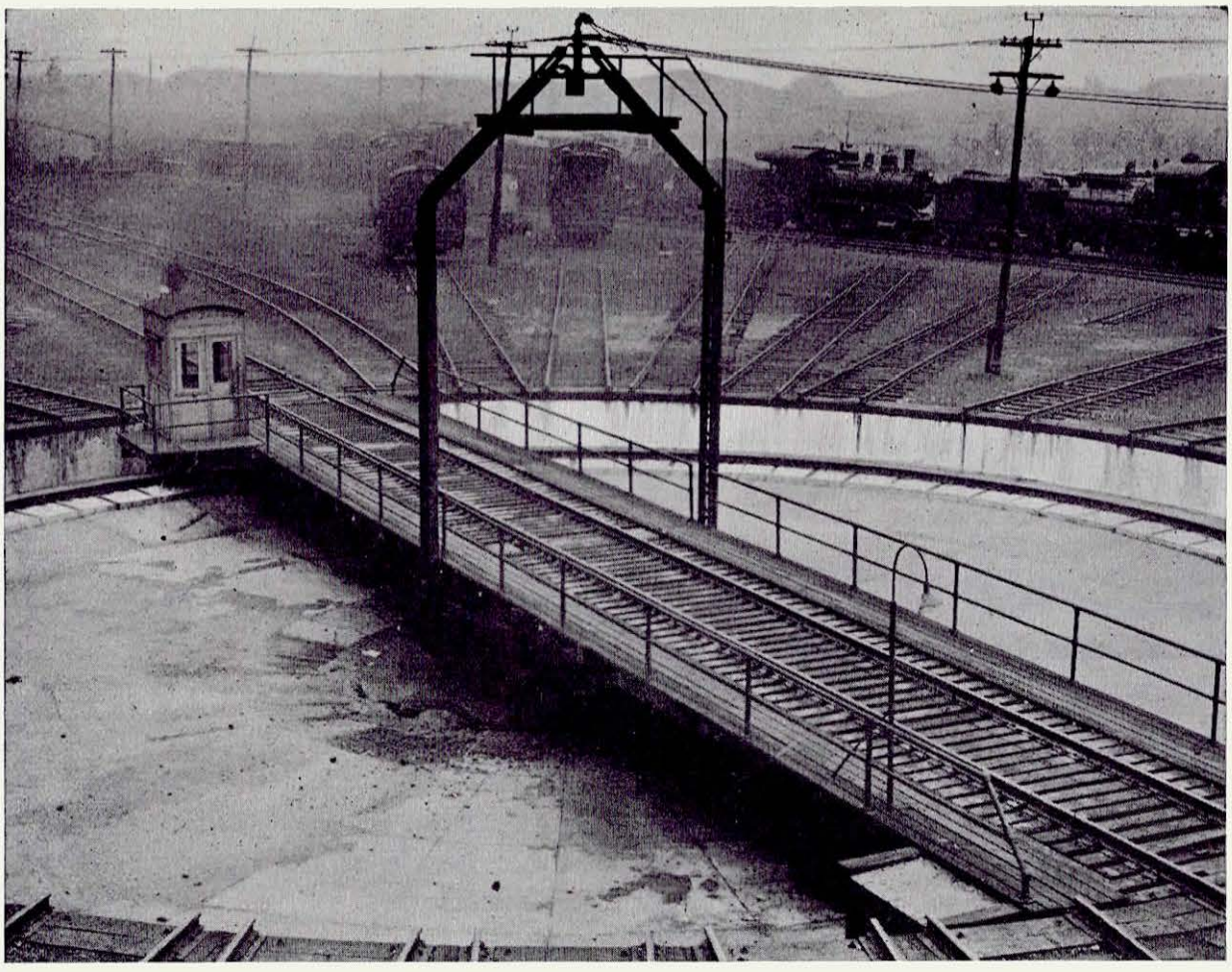
And far from being lubricated in the manner of the old buggy, to which you facetiously refer, Timken Roller Bearings operate within oil-tight, dirt-proof mountings, and run for months on one filling of the oil reservoirs.

The latest development in anti-frictionizing American railroads is the application of Timken Roller Bearings to steam and electric locomotives. This has been a still tougher job, but in nearly 100,000 miles of test service on many railroads all over the country, the Timken Roller Bearing Locomotive—the world's first completely anti-frictionized engine—has proved that this too has been successfully accomplished.

This information should indicate to you, Mr. Dreiser, that our American railroads are not asleep at the switch, but on the contrary are constantly striving to better their service for the good of the nation at large. The Timken Roller Bearing Co., Canton, O.

The foregoing was written in reply to an article by Theodore Dreiser, in which the author severely criticizes American railroads for alleged lack of progressiveness. The article appeared in November 7th "Liberty". Did you read it?

TIMKEN *Tapered Roller* **BEARINGS**



You can eliminate SPOTTING,

turn larger locomotives, and turn them more quickly—when you use a Bethlehem Twin-Span, Non-Balanced Turntable.

McCLINTIC-MARSHALL CORPORATION, General Offices: Bethlehem, Pa.

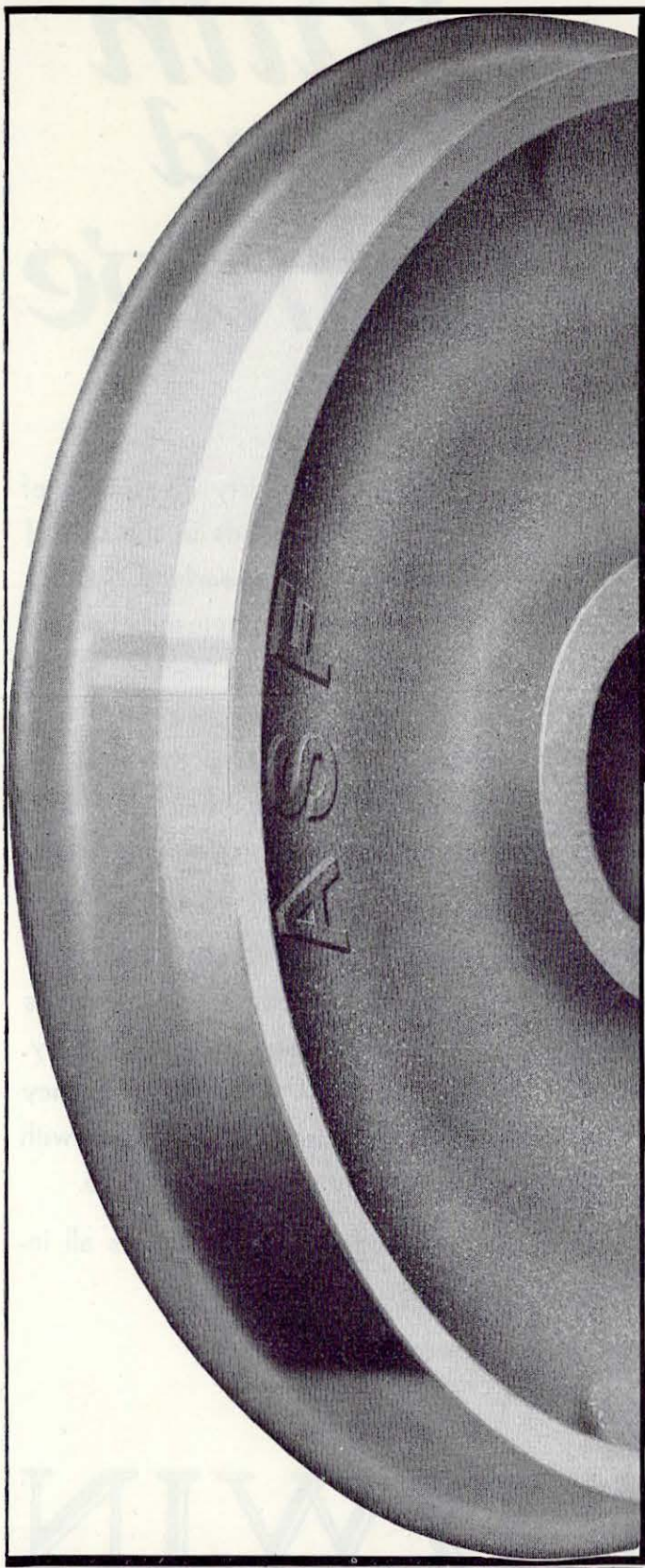
Subsidiary of Bethlehem Steel Corporation

District Offices: New York, Boston, Philadelphia, Baltimore, Pittsburgh, Buffalo, Cleveland, Cincinnati, Detroit, Chicago, St. Louis, San Francisco, Los Angeles

Export Distributor: Bethlehem Steel Export Corporation, 25 Broadway, New York City

BETHLEHEM
TWIN-SPAN, NON-BALANCED
TURNTABLE

DAVIS "ONE-WEAR" STEEL WHEELS



What Does It Cost After You've Bought It?

This is the question to ask about wheels.

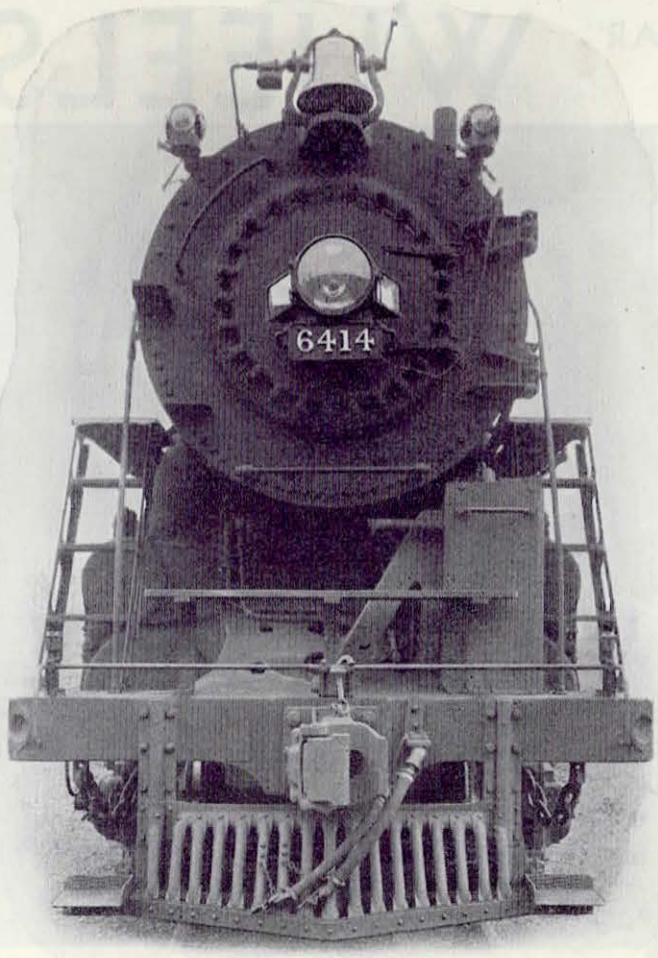
With the Davis "One-Wear" Steel Wheel the first cost is the last.

Contour conditioning and all its attendant expense never troubles the Davis Wheel.

Special composition steel triple heat treated, provides unique qualities that are characteristic only in the Davis Wheel and make them truly "One-Wear."

AMERICAN STEEL FOUNDRIES

NEW YORK CHICAGO ST. LOUIS



Faith and Courage

WITH the property investment of Class 1 railroads in the United States amounting to nearly $27,000,000,000, the highest tribute must be paid to the Executives and Directors of the Railroad Systems for their faith and courage in safeguarding the vast investments entrusted to their care, and more particularly in effecting many improvements which have benefited travelers, shippers and industry in general.

Outstanding among recent improvements has been the introduction of Strictly Modern Locomotives—machines combining high speed with great tonnage hauling capacity. Such locomotives operate at greatly increased efficiency and with far lower maintenance costs, as compared with many of the locomotives built only a few years ago.

Motive power of the modern kind benefits all industry, and demonstrates that—

It takes Modern Locomotives to make money these days!

THE BALDWIN LOCOMOTIVE WORKS 1831 1931

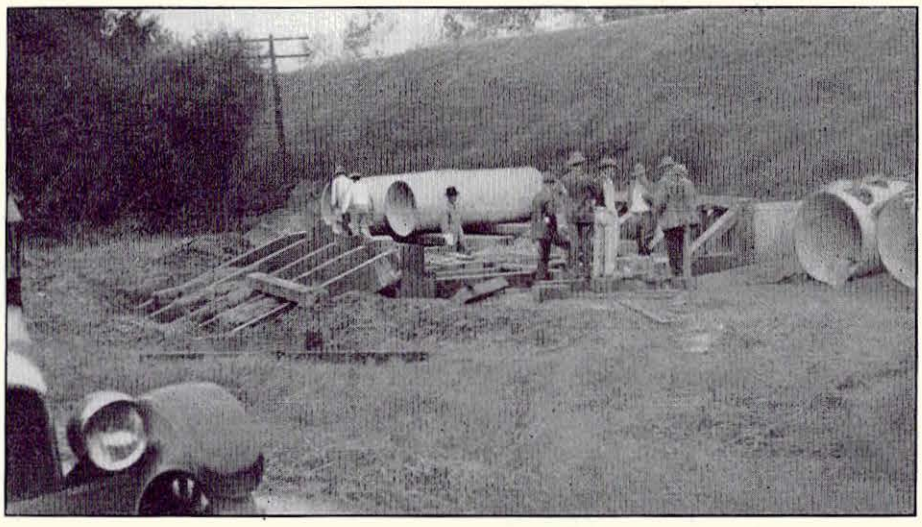
THE BALDWIN LOCOMOTIVE WORKS

PHILADELPHIA

No Chance of Sagging Tracks! No Slow Orders!

ARMCO *Jacking Method*

Goes Under and Through



THE scene shown above is one of many taking place in railroad America. The Armco Jacking Method is being used to place a twin 48-inch Armco Corrugated Iron Culvert under a railway in Texas.

Train operations as usual! No doctoring, fixing or pampering of roadbed after the culvert is in place. No back-filling, hence no shrinkage or settlement. *The roadbed remains intact because the Armco Jacking Method works beneath it.*

Culvert placement is accomplished at a minimum of trouble and expense. Costs range from 30 to 50% less than alternate methods.

Twin investments in economy! The Armco Jacking Method and Armco Corrugated Culverts! Small wonder that railroads everywhere are turning to Armco for cooperation and help in the solution of their drainage problems.

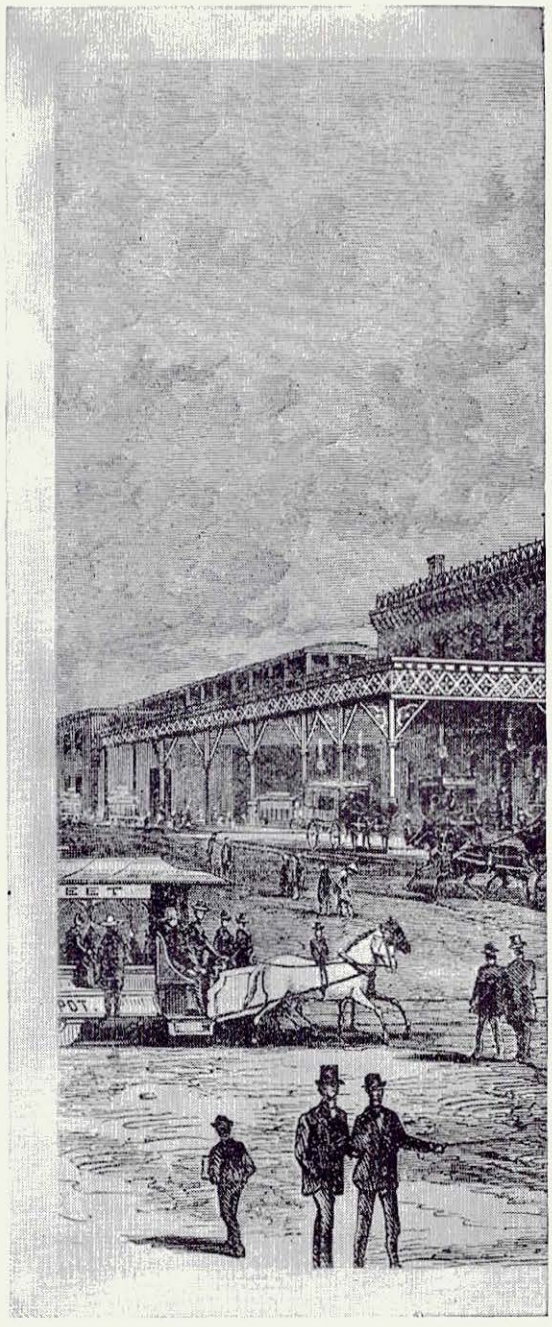
Let us send you the latest facts on this practical, economical and safe method for culvert and drainage installation. Write today for catalog R-7.

Armco culverts and drains are manufactured from the Armco Ingot Iron of The American Rolling Mill Company and always bear its brand.

ARMCO CULVERT MANUFACTURERS ASSOCIATION, ***Middletown, Ohio***

Railroad Depots were elegant in 1870

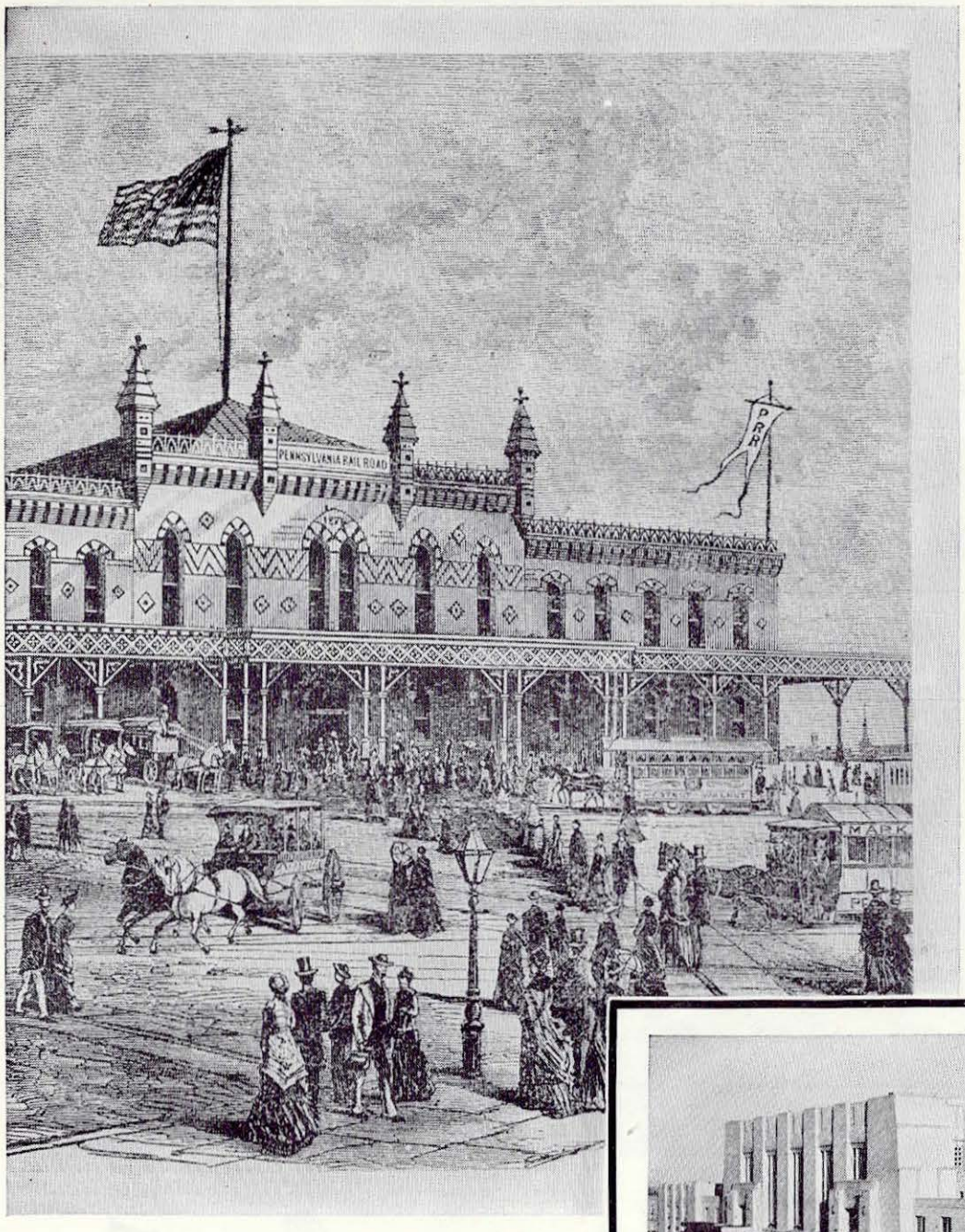
Through decades of progress Johns-Manville Building Materials have kept pace with changing demands for improved terminal construction and design



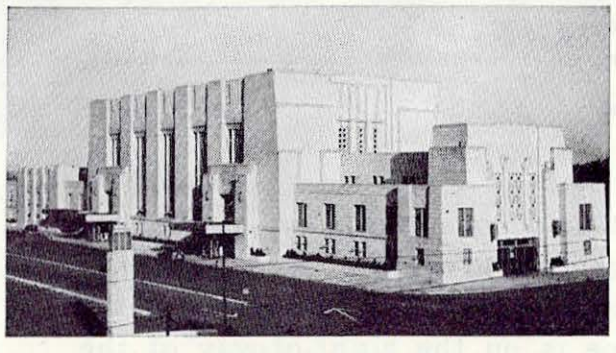
THE remarkable growth of our railroads in the last few decades has brought about a need for improved terminals of modern design.

With pride and gratification we point to the fact that, in practically every one of

Johns-Manville



IN THE 70's railroad depots were elegant in every detail. Compare their elaborate iron grilling, colored glass windows and varnished wood paneling with the simple beauty and efficiency that characterize modern structures.



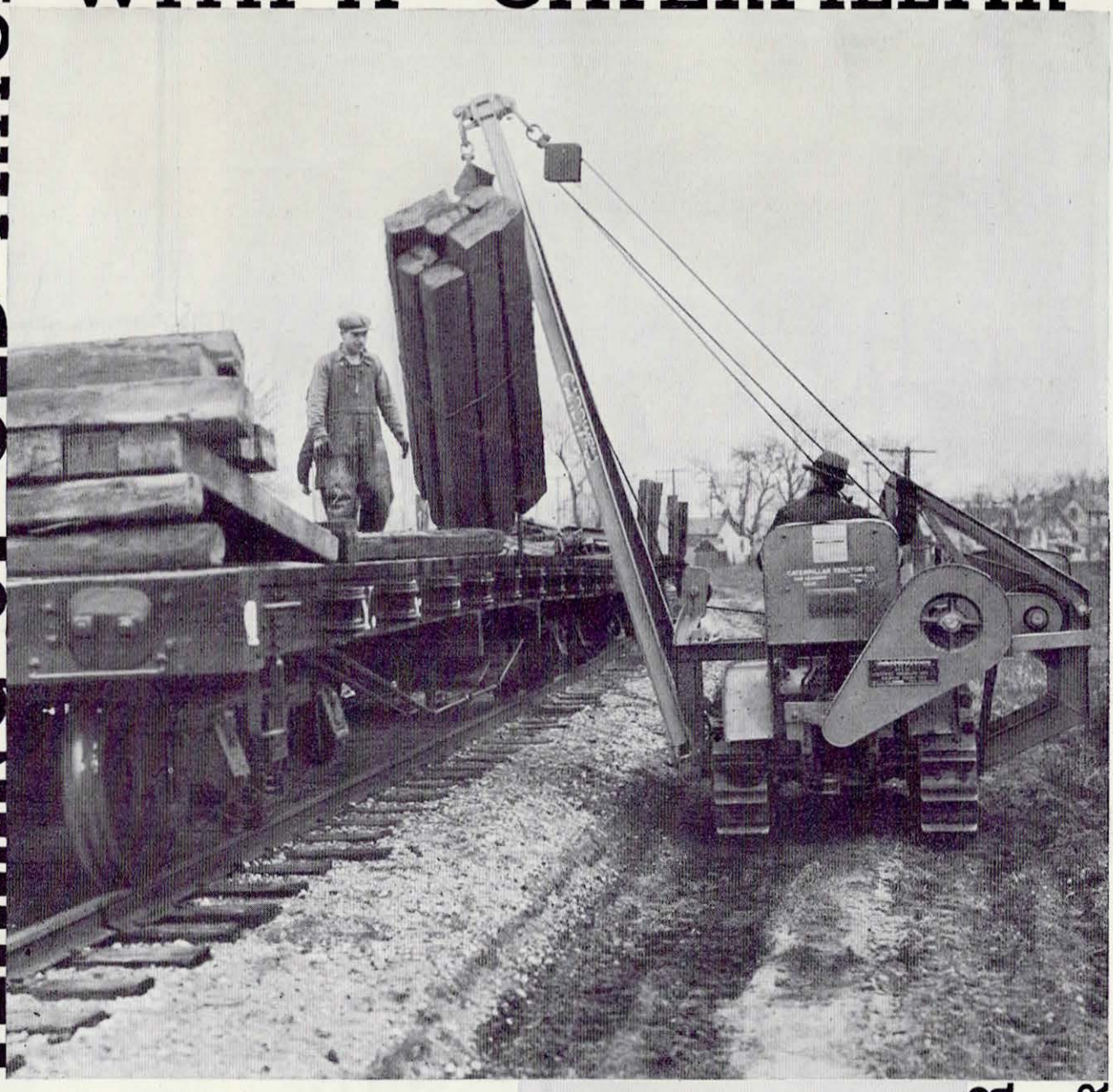
these monuments of utility and architectural beauty, J-M materials, such as insulation, roofing, flooring, Transite, and a variety of asbestos building materials, have contributed greatly to efficiency, economy and safety.

A LARGE NUMBER of Johns-Manville materials were used to protect the new 3½ million dollar Union Station at Omaha, Nebraska, against the ravages of corrosion, fire, rot and water. These materials included Transite, Built-up Roofing, Asphalt Plank, Membrane Waterproofing, Celite for Concrete, Orangeburg Fibre Conduit, 85% Magnesia, Anti-sweat Insulation. The architects were Gilbert Stanley Underwood & Co., Ltd., Los Angeles, California.

Service to Transportation

292 Madison Ave., New York

TEARING UP OLD TRACK WITH A "CATERPILLAR"



THE pictures tell the story—the "Caterpillar" track-type Tractor is a Twenty fitted with an All-Steel side boom—the scene is on the right-of-way of the Nickel Plate Railroad. The "Caterpillar" needs no rails—it lays its own tracks—it goes anywhere where nimble power is needed!

Prices—f. o. b. Peoria, Illinois

TEN	$1100	THIRTY	$2375
FIFTEEN	$1450	FIFTY	$3675
TWENTY	$1900	SIXTY	$4175

Caterpillar Tractor Co., Peoria, Illinois, U.S.A.

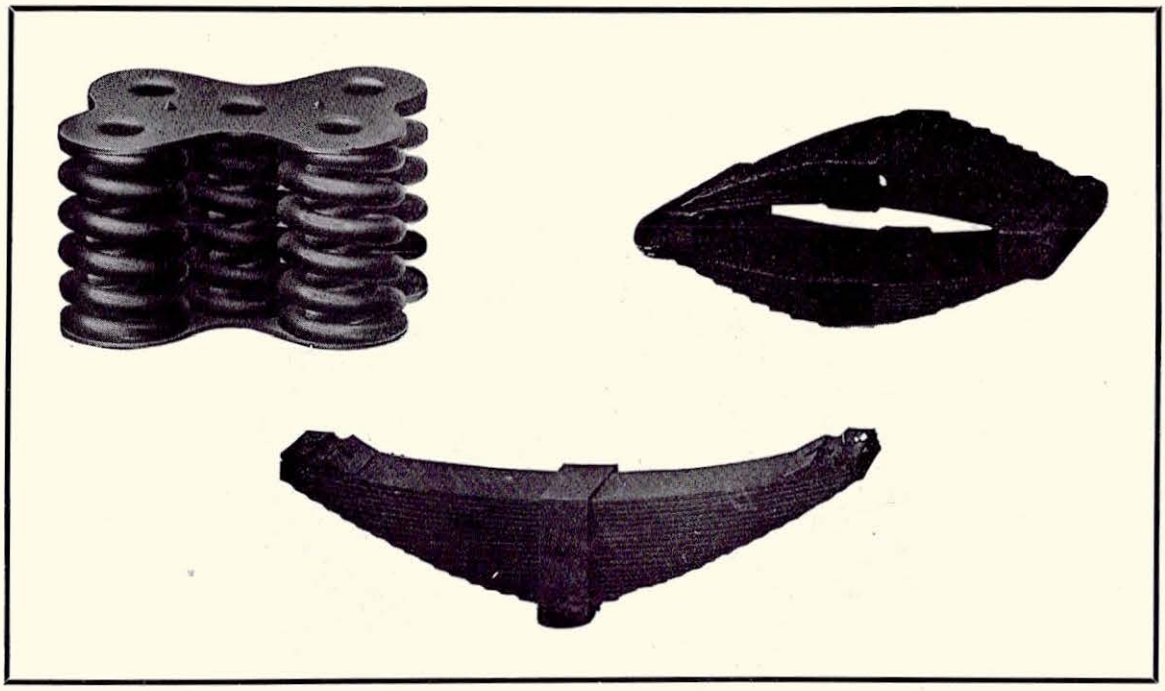
Track-type Tractors Combines Road Machinery

(There's a "Caterpillar" Dealer Near You)

CATERPILLAR

REG. U. S. PAT. OFF.

TRACTOR



It just can't be done

Railroad Officials who approve the reclamation of springs in their own shops do not save money by doing so. It simply can't be done that way.

A repaired spring must be equal to a new one in uniformity and performance. Otherwise it throws parts out of alignment and unbalances the equalizing mechanism. To be equal to new it must be as carefully reworked and heat treated as a new spring. This involves too much costly machinery to be justified by the small volume in tonnage that any one railroad has to handle. It requires skilled workmen who are employed steadily at spring making. It should be directed by a well-rounded organization with every facility for advancing the art through constant research.

Seldom can a railroad justify this organization and equipment and so it is better in every way to send broken springs to us for reclamation.

Railway Steel-Spring Company

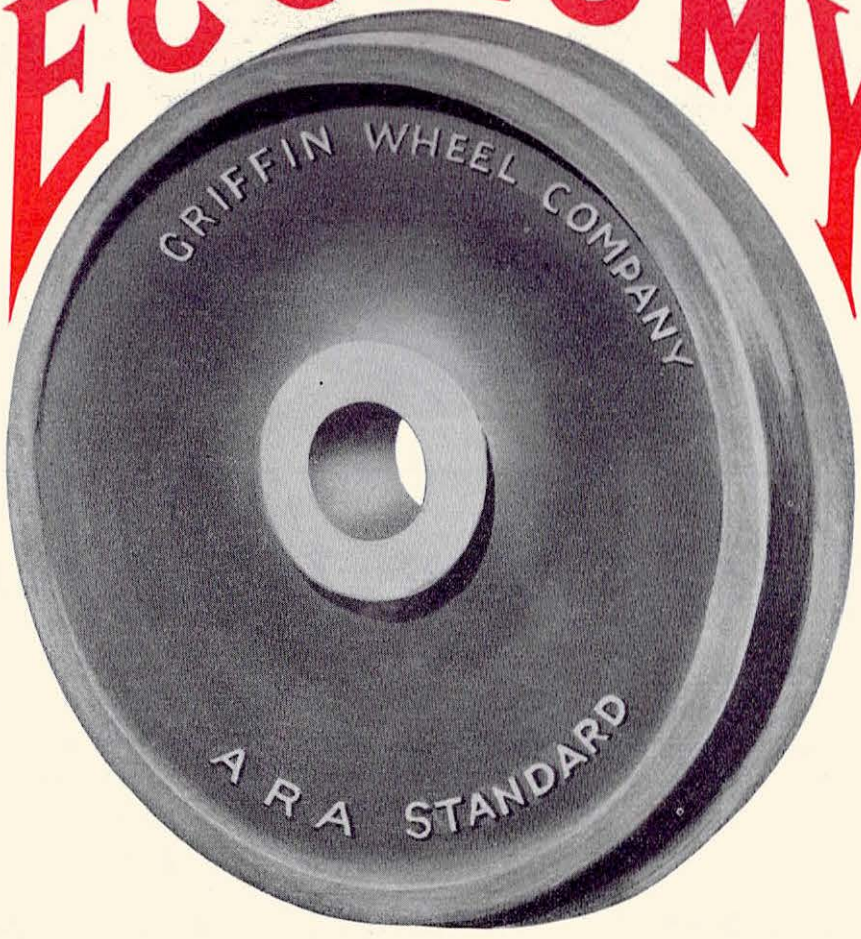
30 CHURCH ST., NEW YORK

Branch Offices:

Chicago, Ill.	Detroit, Mich.	St. Louis, Mo.	Pittsburgh, Pa.	Montreal, Que.
St. Paul, Minn.	Washington, D. C.	Cleveland, Ohio	Denver, Colo.	San Francisco, Cal.

THE WATCH WORD

ECONOMY



TO BE ECONOMICAL A PRODUCT MUST BE

SAFE - DURABLE - PROFITABLE

THE **GRIFFIN SINGLE PLATE WHEEL** IS THE MOST ECONOMICAL FOR ALL CLASSES OF FREIGHT AND EXPRESS SERVICE.

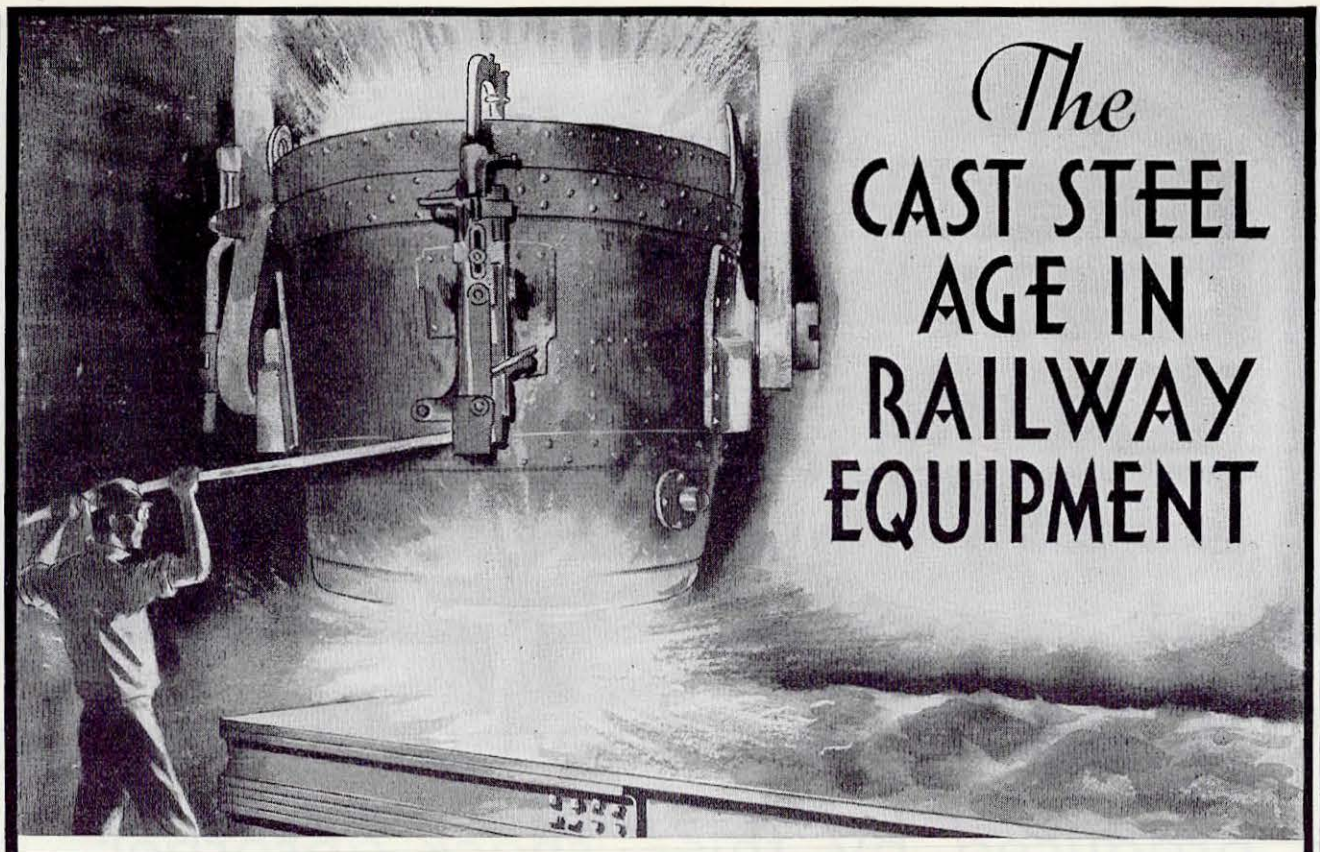
THE FOOD SUPPLY OF THE NATION IS CARRIED ON CHILLED TREAD WHEELS

GRIFFIN WHEEL COMPANY

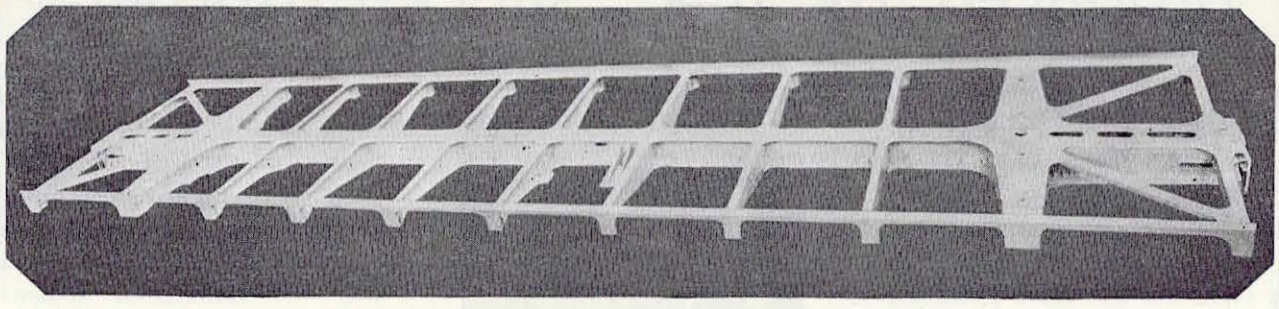
410 NORTH MICHIGAN AVENUE CHICAGO, ILLINOIS

Plants

Chicago	Boston	Cleveland	Kansas City	Denver	Los Angeles
Pullman	Detroit	Cincinnati	St. Paul	Salt Lake City	Tacoma
			Council Bluffs		



The CAST STEEL AGE IN RAILWAY EQUIPMENT



ONE-PIECE CAST STEEL UNDERFRAME FOR GONDOLA CAR

Commonwealth One-Piece Freight Car Underframes

Form Strong Foundation for Modern Freight Cars

Materially Reduce Maintenance of Entire Car

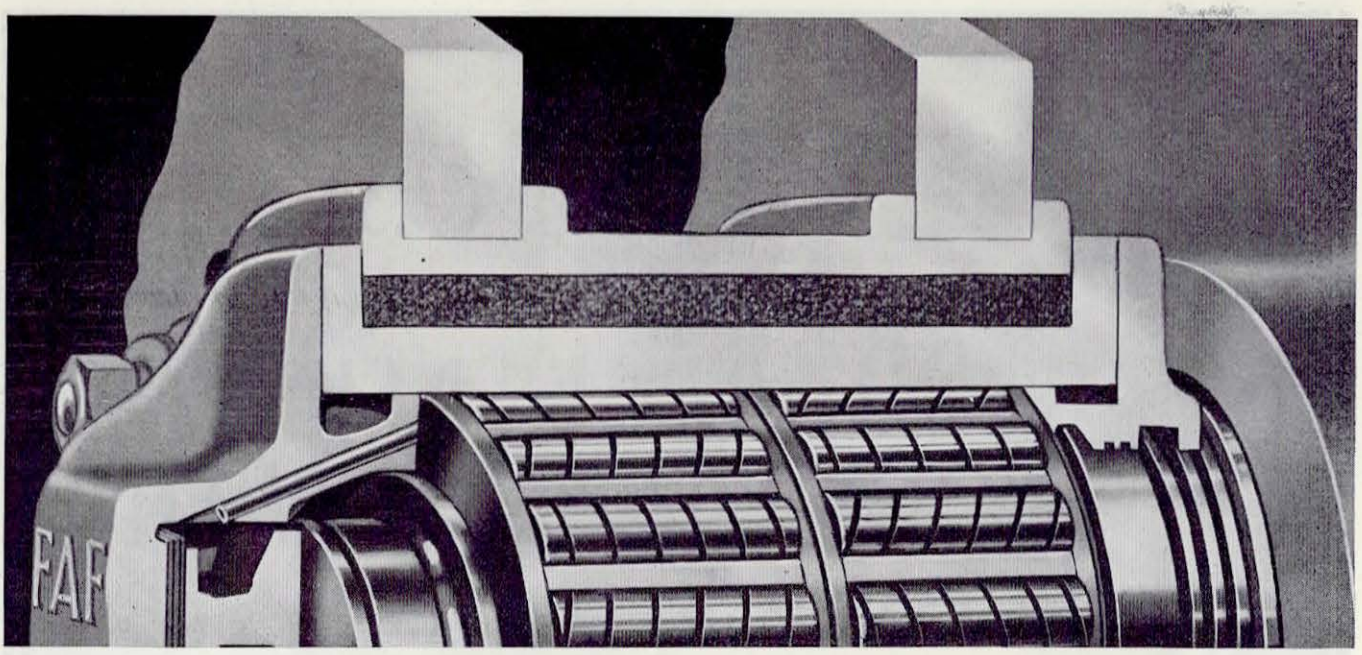
Solve the Problem of Corrosion

Meet Present Day Demand for Stronger Freight Cars Without Increased Weight

GENERAL STEEL CASTINGS CORPORATION

COMMONWEALTH PRODUCTS

EDDYSTONE, PA. GRANITE CITY, ILL.

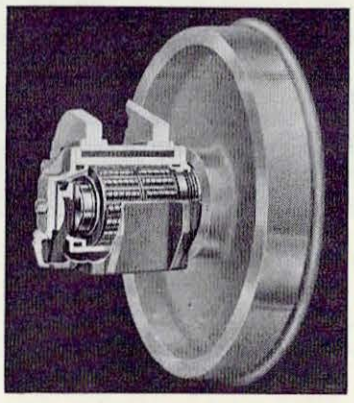


Consider the added advantages

produced by this "shock-absorber"

RIDE in a Fafnir - Melcher equipped car and you will experience something "different." There is a restful smoothness, a gliding sensation and a noticeable absence of noise. The din and clatter arising from the inevitable pounding on the wheels has been absorbed by the non-metallic pad which lies between equalizer and bearing.

Another important advantage cannot be sensed. The maintenance records tell this story. Bearing life is lengthened because shocks are effectively cushioned and vibrations are practically eliminated by this pad. That these benefits are enjoyed continuously for the life of the bearing has been demonstrated on many of America's leading railroads.



Every requirement fulfilled

1. *Ample capacity to carry all loads without heating.* 2. *Positive lubrication at all speeds and temperatures.* 3. *Lateral adjustment possible when made necessary by truck wear or distortion.* 4. *Insulation from shocks and deadening of noise.* 5. *Interchangeability with A. R. A. equipment.* 6. *Simplicity of installation and maintenance.*

Long life and low maintenance costs are promoted by many other features of the Fafnir-Melcher design. First of all, the simplicity and compactness which permits of heavier and stronger sections. Then too, the lubrication system is unique. The oil is filtered by a wick and supplied at the rate of 20 drops a minute automatically at every temperature. The large rollers are positively aligned to assure perfect rolling and minimum wear.

All of the features of the Fafnir-Melcher design, which have proven their worth on most of America's leading railroads, are described in detail in the Railway Bulletin.

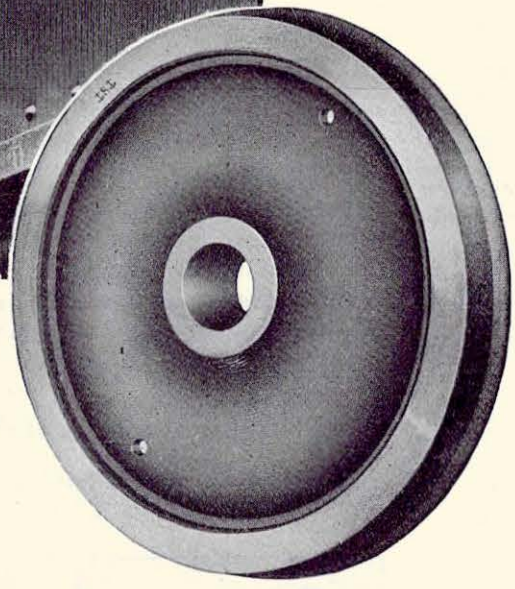
We will gladly send you a copy.

FAFNIR BEARINGS INCORPORATED

General Sales Office and Factory—New Britain, Conn. *Western Service Div.—39 S. Clinton St., Chicago, Ill.*

FAFNIR-MELCHER Roller Bearings for Car Journals

EWING GALLOWAY



Perfect maintenance of schedules depends not only on the human factor but also on the system and the equipment. "Standard" Q.T. wheels are showing greatly superior structural strength and wear. Their use simplifies part of the equipment problem — they keep rolling stock in operation longer and lengthen the intervals between wheel replacements.

Tires
Rolled Wheels
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GENERAL OFFICE & WORKS:
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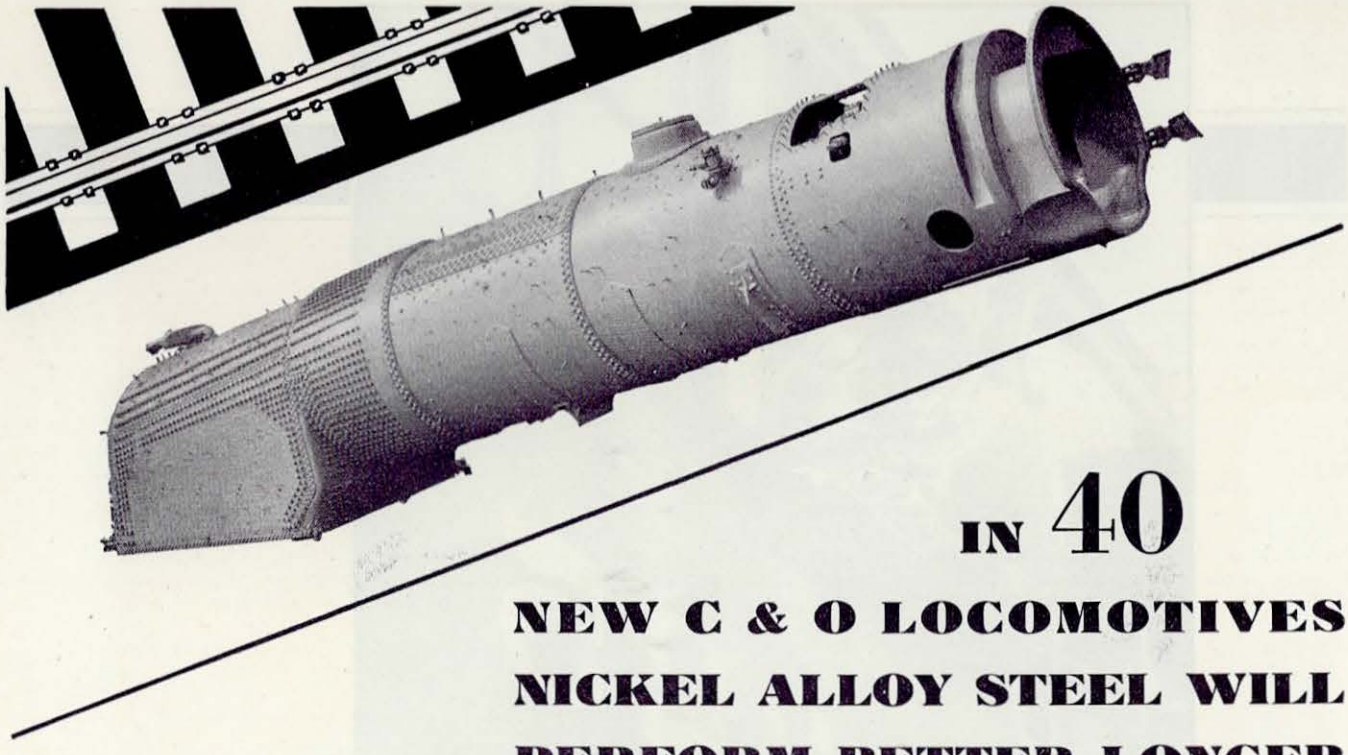


IN 40 NEW C & O LOCOMOTIVES NICKEL ALLOY STEEL WILL PERFORM BETTER LONGER

Nickel Alloy Steel boiler for C & O locomotive built by LIMA LOCOMOTIVE WORKS, INC., Lima, Ohio. Boiler plate furnished by OTIS STEEL CO., Cleveland, Ohio.

The most powerful 2-cylinder engines ever built were recently completed by the Lima Locomotive Works for the C & O.

To secure maximum strength with minimum weight, and to obtain toughness and shock resistance, the main frames, guide yoke crossties and crossheads are made of 2% low carbon Nickel Steel castings furnished by Ohio Steel Foundry Co.

The boiler shell courses of low carbon Nickel Steel will stand higher pressures with a reduction in plate thickness, which allows a saving in weight over ordinary boiler steel.

Builders of locomotives that meet present day transportation requirements realize that Nickel Alloy Steel "performs better longer" in railway service, just as it does in all other industries where dependable strength is demanded.

Send for booklet "Alloy Steels in the Railroad Field".

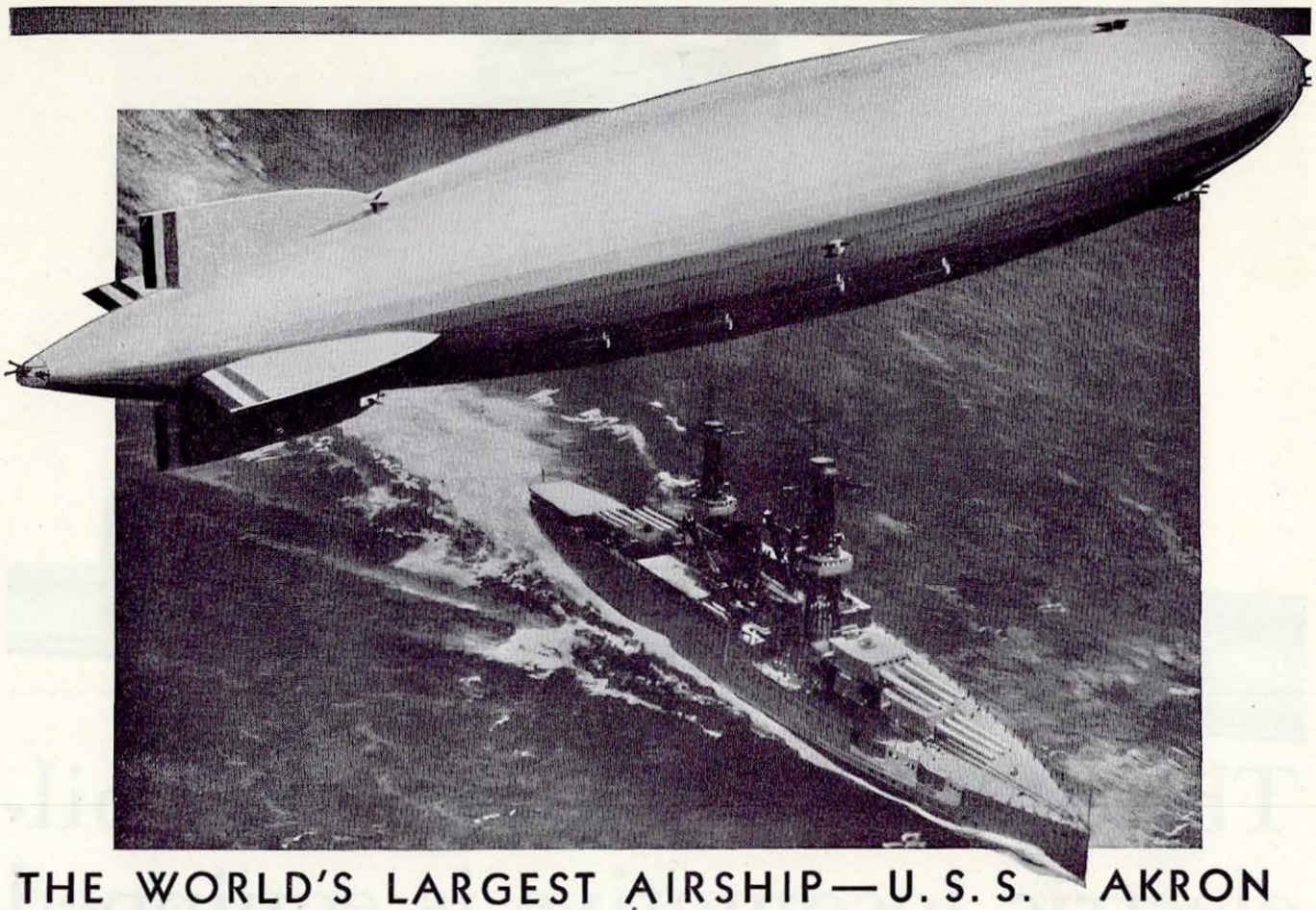
THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL STREET, NEW YORK, N. Y.

Miners, refiners and rollers of Nickel. Sole producers of Monel Metal

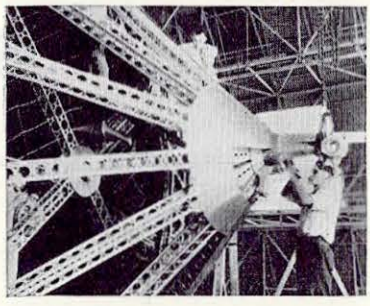
Nickel
ALLOY STEEL
PERFORMS BETTER LONGER

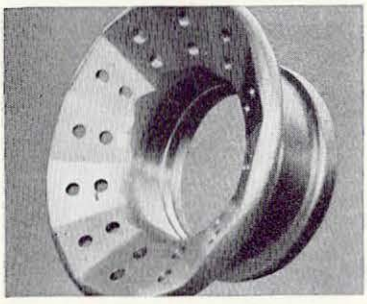
Dependable materials are the best assurance of dependable performance

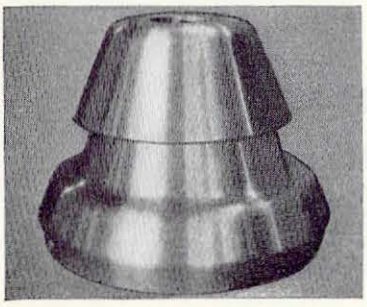
Nickel Alloy Steel main frame for C & O locomotive built by LIMA LOCOMOTIVE WORKS, INC. — Frames, crossheads and guide yoke crossties by OHIO STEEL FOUNDRY CO., Lima, O.



THE WORLD'S LARGEST AIRSHIP—U. S. S. AKRON TIES UP TO MIDVALE





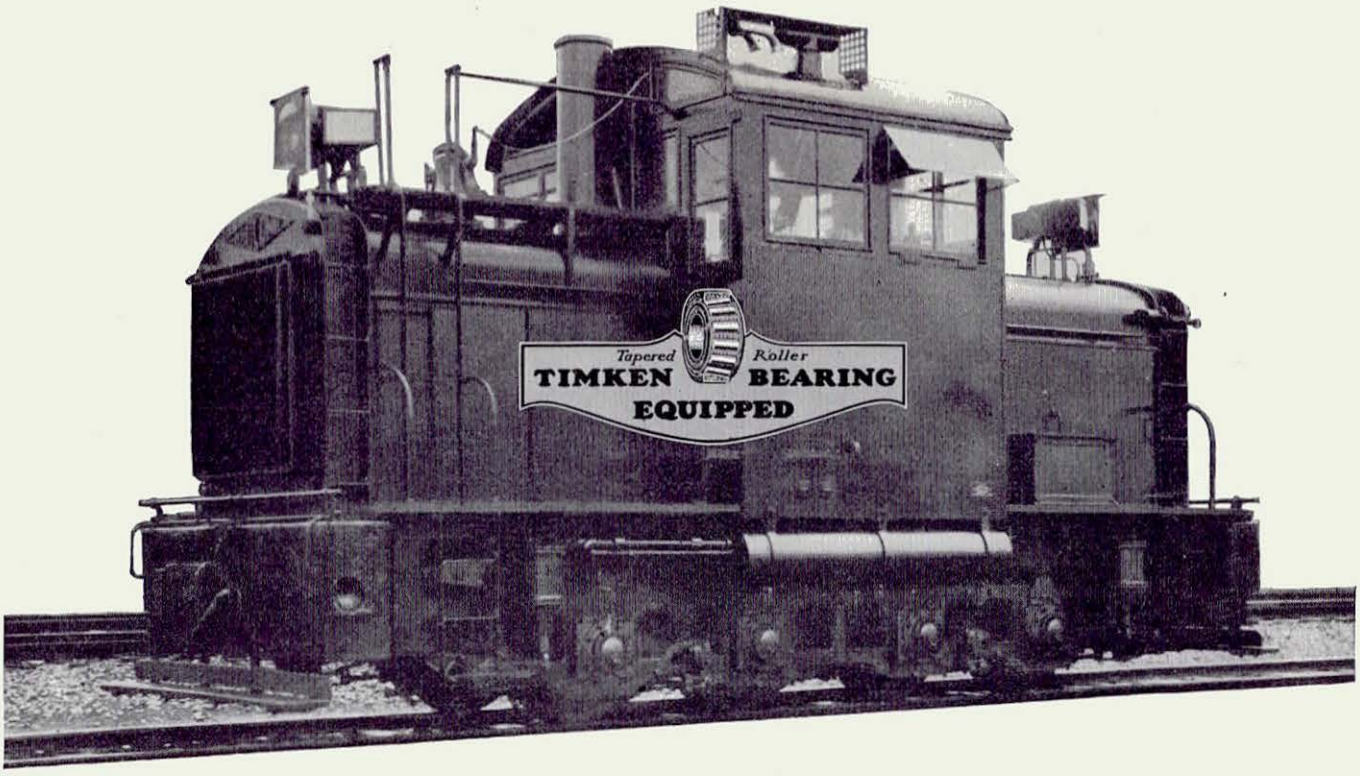


When the largest airship ever built—785 feet long, 146½ feet high—comes to rest, you can imagine the terrific tug on its mooring cone. Goodyear zeppelin engineers, navy engineers, must have checked pretty carefully the unusual stress for which they should allow,—have studied and restudied the design, the materials from which this mooring cone should be built.

Midvale was chosen. Further, Midvale not only met, but far exceeded, the specifications. To a user of steel for unusual requirements these figures from the test bars may be interesting:

Tensile Strength	Yield Point	Extension in 2″	Reduction of Area
180,000 lbs.	172,000 lbs.	13.5%	47.2%
184,500 lbs.	169,000 lbs.	14.5%	46.2%

Midvale is accustomed to making steel for unusual conditions—perhaps such conditions confront you. If so, we welcome an opportunity to study your requirements and make recommendations. Simply call on The Midvale Company at its nearest office—Philadelphia, New York, Pittsburgh, Washington, Cleveland, Chicago and San Francisco.



This 90-ton WHITCOMB oil-electric locomotive is equipped with Timken Bearings on all axles

It is in use for switching on the Milwaukee Road. The Whitcomb Locomotive Company, Rochelle, Ill., has standardized on Timkens for the axles of all of its large oil and oil-electric locomotives . . . Dependability, economical operation and low maintenance are associated with Timken Tapered Roller Bearings in steam and electric locomotives, passenger coaches, Pullmans and all types of railroad rolling stock. Specify Timken Bearing Equipped. The Timken Roller Bearing Company, Canton, Ohio.

TIMKEN *Tapered Roller* **BEARINGS**

55% RETURNED YEARLY ON INVESTMENT

—*how an improved power factor cut power bills*

AMONG THE MANY meritorious achievements of railroad managements during the past decade is their success in reducing losses and eliminating waste.

ONE SOURCE OF LOSS frequently overlooked is the penalty imposed in the monthly power bill by low power factor.

POWER FACTOR IS the ratio of "current doing actual work" to the "total current which flows in the lines." Wherever alternating current is used, power factor is of vital concern to the user, whether power is purchased or generated.

POWER COMPANIES generally base their charges on the value of power factor at the consumer's plant—the lower the power factor, the higher the charge. This is necessary owing to the increased cost of supplying power when power factor is low.

MAINTAINING POWER FACTOR at a high level relieves overloaded generators, transmission lines and transformers so that added investment in larger equipment is unnecessary.

CORRECTIVE APPARATUS in the form of "capacitors" and synchronous motors improves power factor.

ONE RAILROAD MANAGEMENT'S investigation of this form of "loss" is typical of what can often be accomplished.

THE AVERAGE MONTHLY power consumption of a 30-stall roundhouse and 16-pit locomotive shop was 491,000 kw-hr. with an annual power bill of $80,880. The average power factor at this time was 85%.

BECAUSE OF THE PENALTY imposed on the railroad for an 85% power factor by the power company, the railroad was required to pay for the equivalent of 500,200 kw-hrs. each month, although but 491,000 kw-hrs. were actually used.

A WESTINGHOUSE 300-KV-A. capacitor at an approximate cost of $5000, including fixed charges (taxes, interest, insurance, depreciation, etc.), resulted in the reduction of the annual power bill to $78,130, saving $2750 or 55% on the investment.

THE CAPACITOR paid for itself in less than two years.

Service, prompt and efficient, by a coast-to-coast chain of well-equipped shops

Westinghouse

WESTINGHOUSE ELECTRIC

T 31944

Plenty to be Thankful For

The rising price of wheat and corn
Has filled the farmer full of cheer
Prosperity has been reborn
And better times will greet next year

Grains shipped 'neath Universal Roofs
Arrive unspoiled the consignee's door
'Cause cars stay dry and weatherproof
That's something to be thankful for.

Hutchins Car Roofing Company

RAILWAY AGE

Mr. Eastman on the Railroad Problem

Joseph B. Eastman probably wields more real and effective power at the present time than any other man in the United States, whether in public or business life. The railroads are one of the country's very greatest industries. The Interstate Commerce Commission determines the rates the railways may charge, and, in consequence, the earnings that, under any given conditions, they can make. Over no other industry does any body exercise so much power; and never before in the commission's history has any of its members had an influence in its counsels remotely approaching that now exercised by Commissioner Eastman.

The most striking illustration ever given of Mr. Eastman's domination of the commission is afforded by the unanimity of its decision and opinion in the 15 per cent rate case, and especially by its unanimity in proposing its startlingly socialistic plan for pooling and distributing railway earnings.

Mr. Eastman on Regulation by Commission

Even the President has to heed Congress and the Supreme court. The commission has refused for eleven years to carry out the rate-making provisions of the Transportation act as intended by Congress, and has thereby prevented the railways from earning a constitutional "fair return"; it has refused to carry out the valuation law as intended by Congress; and since the Supreme court overruled its decision in the O'Fallon valuation case it has not changed its attitude regarding valuation but has urged Congress to pass legislation to nullify the court's decision by authorizing it to establish rate bases instead of valuations. Such a pooling of earnings as it proposed in its recent decision was never contemplated by Congress and is of very doubtful legality. For all these policies, which show a determination by the commission not to be bound either by laws or court decisions, and which have resulted in the railways being regulated in accordance with no consistent or recognable standard excepting the arbitrary judgment of the commission, Mr. Eastman unquestionably is principally responsible. His economic premises and reasoning from them have become the warp and woof of every important opinion rendered by the commission, and through their effect upon the railways probably produce more effect upon economic conditions and tendencies in the country than those of any other man.

The views expressed by a man who wields so much real power are very interesting and significant. On November 7 Commissioner Eastman delivered an address entitled "Public or Private Ownership" before the American Academy of Political and Social Science at Philadelphia. There appeared in the *Railway Age* of the same date an editorial entitled "Railroad Freedom or Government Ownership?" In both our editorial and Mr. Eastman's address there were made comments upon the present policy of regulation by commission. The extent to which Commissioner Eastman himself agrees with the *Railway Age* regarding regulation by commission is indicated by the following quotations made from his address:

> "The commissions must obtain the information upon which they act, not as executives inform themselves, but through the long drawn-out processes of judicial procedure. * * * Such procedure consumes time with the utmost prodigality, and labor and money as well. The burden falls alike upon the companies, the government and the general public. Many such proceedings, especially when questions of valuation were involved, have dragged their long way through months and even years of time.
>
> "Furthermore, management in part through public regulators has other singularities. To be done efficiently it requires, like any other difficult undertaking, much accumulated knowledge, experience and acquired skill. Yet there is seldom an opportunity for the prior training of commissioners. As a rule they must acquire much of their special knowledge and skill after they assume office. They are also subjected to the hazard of reappointment at stated intervals. * * * It is no easy thing to find men who are fitted for the job and willing to undertake it, and when they are willing it may be chiefly with the hope that the job will prove a mere stepping-stone to more profitable occupation. The result is that there are many inefficient men in public regulation, and the turnover among those who are efficient is very great."

While Commissioner Eastman and the *Railway Age* so far agree regarding the shortcomings of regulation by commission, they proposed widely different means of preventing the natural effects of those shortcomings. The *Railway Age* proposed a reduction of the power of the Interstate Commerce Commission which would give railway managers more freedom to manage the railroad business. Commissioner Eastman proposed government ownership and management. He did not advocate immediate adoption of this policy. "Transportation is now in an era of change," he said. "Competition is a bigger factor than it has been for many years. It is difficult to visualize even the near future. Until we can see ahead a little more clearly,

at least, I am not ready to advise that steps be taken toward public ownership and operation of the railroads." But the rest of his address consisted of the arguments usually made to show that government ownership and operation of what he called "public" industries is preferable to private ownership and management.

The *Railway Age* has become convinced that owing to the shortcomings of regulation by commission the power of the commission must be greatly reduced to prevent the railroads from being driven into government ownership. Mr. Eastman does not fear that outcome, but hopes for it as a solution of the railroad problem. If it is true that the present system of regulation by commission is a failure and cannot be made a success, which will the public favor—railroad freedom or government ownership?

The Argument for Government Management

"Given a plan for the public operation of these industries which will give the managers a degree of autonomy somewhat comparable to that existing in private industry and which will protect them against continual petty and political influence," Mr. Eastman is "confident that no difficulty would be experienced in obtaining the services as executives of men of the highest ability and character." But how can Mr. Eastman believe that the conditions and men necessary for successful government management could be obtained and retained, when as he points out so clearly, such conditions and men cannot be obtained and retained for purposes of regulation? Of course, regulation and management are widely different. Why assume, however, that there would be more opportunity for the "prior training" of managers than of commissioners; that the managers would be less "subject to the (political) hazard of reappointment at stated intervals" than are commissioners; that if managers "exhibited marked capacity" there would be any less "demand for their services elsewhere where standards of remuneration are higher" than there is now for the services of members and employees of commissions? If "it is no easy thing to find men who are fitted for the job (of regulating) and willing to undertake it", and if, owing to this and other reasons mentioned by Mr. Eastman, "there are many inefficient men in public regulation, and the turnover among those who are efficient is very great", why assume that the same influences would not cause the same inefficiency in government management? When Mr. Eastman was stating so well the reasons why regulation by commission is apparently impossible to make successful he was also stating the reasons why government management would be a failure.

The public rightly believes that more railroad freedom would be preferable to government railroad management. Mr. Eastman's ability, industry, intelligence, sincerity and courage make him the dominant member of the Interstate Commerce Commission, and therefore the most powerful man in the country, but, unfortunately, the power he wields, when combined with his belief in government ownership, makes him, in our opinion, also the most dangerous man in public life. Because he believes in government ownership he is consciously or unconsciously working incessantly to bring it about, and is causing such interpretation and application of laws intended to maintain private ownership as, if continued, will make the maintenance of private ownership impossible.

Our "Colossus of Roads"

The *Railway Age* has more admiration for Mr. Eastman than it has ever had for any other member of the commission. By sheer industry and ability he has raised himself to a position where he bestrides, not only the commission, but the railroad industry, like a Colossus. He is, indeed, our "colossus of roads". "For the financial overlords of our railroads and public utility companies I have no particular admiration", he says. One who has attained and exercises such gigantic power is amply justified in speaking thus disdainfully of those mere "financial overlords" who, like his fellow commissioners, "walk under his huge legs and peep about". "Upon what meat doth this our Cæsar feed that he is grown so great?" "Perseverance", said a wise man of old, "is more prevailing than force". Mr. Eastman has *both* perseverance and force—perseverance which never tires, and the force of federal laws which he interprets and applies, or refuses to apply, in accordance with his own judgment as to what is right and expedient, and which therefore he uses most effectively to defeat the very purposes for which they were intended.

What are those who are opposed to government ownership going to do about Mr. Eastman, his power and his exercise of it in a way that is driving the railways straight toward government ownership? They have done little yet excepting bow to his will. Railway officers say much in private, but little in public, because those subject to autocracy hesitate to talk publicly about autocrats. The National Industrial Traffic League, composed of traffic representatives of commercial organizations and large industrial corporations which are highly vulnerable to socialistic attacks, gladly accepts socialistic ideas regarding railways, and presents to the commission in an important rate case a communistic plan for pooling and dividing railroad earnings. The heads of great business interests that profess to be opposed to "government in business", government ownership and every other kind of "socialistic" project remain silent while the most powerful man in the government openly advocates government ownership of railways and imposes upon the railways policies entirely inconsistent with every principle of private property and private enterprise.

No wonder we admire Mr. Eastman! Singlehanded he is doing more to promote government ownership of railways than is being done by all the "overlords of finance" that he despises and everybody else to prevent the adoption of that policy.

Spring Switches Locked Electrically

Within recent months tests on two large roads have proved the practicability of using electrically-operated machines for locking switches equipped with buffer-type springs. A spring rod in a switch to permit trailing movements without stopping the train to operate the switch has been used for many years by street railways, but its use was not practicable for main-line steam-railroad service until the buffer was developed some 10 years ago to prevent the switch from operating when each set of trucks trailed through. The buffer arrangement has now been so simplified and improved from an operating standpoint that many roads have installed them at the ends of double track, at switches leading from yards, and at certain sidings where train movements in one direction predominate. In most cases the railroads have considered it desirable also to reconstruct the switch layout with reinforced points, plates and rail braces similar to those required for an interlocked switch. Furthermore, adequate signal protection is considered essential to insure safe train operation.

Approximately 81 spring switches were installed in the United States and Canada in 1927, more than 158 in 1928, 143 in 1929 and 152 in 1930. The most important consideration that has militated against the more extensive use of spring switches is the fact that it has been deemed advisable on some roads to limit the speed of trains not using the switch to 20 m.p.h., while others have permitted speeds up to 35 m.p.h. or more, the speed being limited because of the fear that dragging equipment might break some of the switch connections or permit the points to stand open, a hazard which is, of course, not present in the same degree with a regular interlocked switch.

With this thought in mind the signal officers of several roads have, in co-operation with the manufacturers, been developing a machine and circuits for locking spring switches. Ordinary electric locks for outlying switches were not adequate, the desirable arrangement being to apply the same lock rods as are used for an interlocked switch, and to operate the lock plunger by a power unit, such as a motor, through proper gearing. The next problem was to so control the operation of this locking machine automatically that the switch would be locked for all through train movements on the main line and unlocked for a train making a trailing movement out of the siding, as well as to provide a means of unlocking it when it became necessary to throw the switch by hand before entering the siding.

All of these requirements have now been worked out satisfactorily and installations are in service. This development is an important step in perfecting a device which, where adaptable, will prove an economical means of eliminating train stops.

Stop License Reciprocity For Commercial Vehicles!

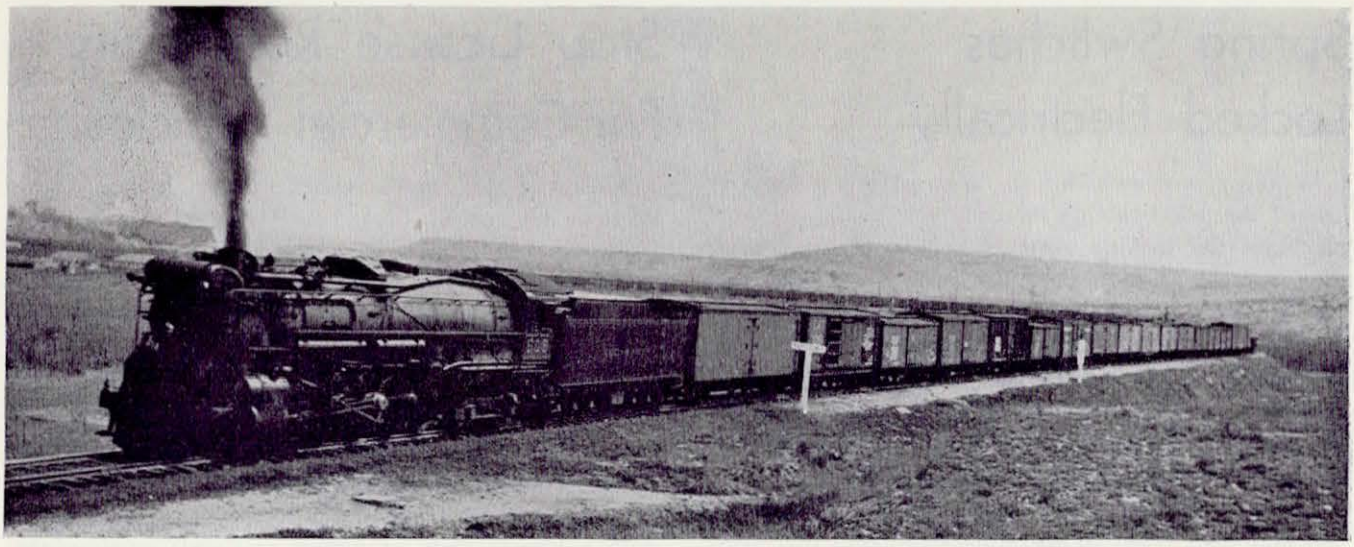
The ever alert motor vehicle department of Connecticut has recently issued its Motorists' Manual, an instructive pamphlet of interest to all motor vehicle operators. Among its features is a tabulation of reciprocal privileges accorded by the various states and Canadian provinces to motorists of other states and provinces. The outstanding characteristic of this inter-state and inter-provincial courtesy is, of course, that almost without exception reciprocity as to license plates and operator's licenses for private motorists is universal, at least for limited periods: A motorist with a license plate of almost any state or province can make the rounds of almost all the others without being required to purchase local licenses.

That this practice of reciprocity for private passenger vehicles is, on the whole, praiseworthy there can be little question. But is there any sense or reason in similar reciprocity for commercial vehicles? A state may welcome tourists heartily, but is there any reason why it should similarly welcome a commercial invasion from the outside to the extent of freeing the invaders of any obligation to pay for the publicly-owned facilities they utilize for their own private gain?

The line of distinction between private motorists and commercial highway users in the granting of reciprocal privileges is clearly drawn in a number of states. But in others it is unjustifiably loose. In general, buses are required to bear license plates of each state in which they are operated and, in some states, common and contract carrier trucks must meet the same requirement. In all too many jurisdictions, however, limited reciprocity at least is granted to trucks, and limited reciprocity, by reason of the difficulty of determining when the limits are reached, is just about as satisfactory to truck operators as complete reciprocity.

The cause of those interested in more adequate taxation and regulation of commercial highway vehicles has not advanced as rapidly as it deserves. This has been due in part to lack of organization; in part to the fact that the constitutional law on the question has not yet been completely defined; partly also perhaps to the skill of the opposition in inserting "jokers" into bills to make them unconstitutional; and, in general, to the great complexity and novelty of the problem.

The effort to deal with the whole question comprehensively must go on. Meanwhile the ultimate goal should not detract all attention from an obvious and nearer one which can be achieved here and now, i.e., *an iron-clad law in each state putting an end completely to any form of license reciprocity as between states for commercial vehicles*, whether they are operated for hire or not.



A 4,000-Ton Texas & Pacific Train with One Helper on a 1.3 Per Cent Grade

Operating Economy Series — Article No. 20

The Modern Locomotive—What and Why

Highly developed traveling power plants move heavy trains at higher speeds, improving the character of freight service and decreasing the costs in both freight and passenger-train service

TWENTY years ago the designer had two distinct objectives in his effort to increase the capacity of locomotives for road service. The capacity of the passenger locomotive was determined by its maximum horsepower output. Speed was the objective. The capacity of the freight locomotive was measured by its maximum tractive force. Maximum tonnage over ruling grades was the objective.

Today the design of locomotives for both services is controlled by a single objective. Long distance passenger trains have increased in weight until some of them run as high in gross tonnage as the drag freight trains of twenty years ago. At the end of a decade of intensive effort to improve freight service freight trains are now frequently operated at passenger-train speeds. Whether designed for freight- or heavy passenger-train service, therefore, the capacity of the locomotive is now being measured in terms of horsepower. What this means to the designer was clearly defined by C. A. Brandt, chief engineer of the Superheater Company, in a paper read before the Canadian Railway Club in February, 1928, in which he said: "The standard of excellence in design should be the engine that has given the highest power output per unit of total weight, weight on drivers and per thousand pounds of theoretical tractive force."

When measured by this standard modern locomotives are decidedly in advance of those built even ten years ago. Then a passenger locomotive which developed an indicated horsepower per 100 lb. of total weight was a subject for special comment. Today, many well designed freight locomotives do not appreciably exceed that figure; passenger locomotives are in service which have developed a cylinder horsepower for each 80 lb. of total weight and practically 100 cylinder horsepower for each 1,000 lb. of cylinder tractive force. A twelve-coupled freight locomotive built to exert over 90,000 lb. tractive force has developed 50 indicated horsepower per 1,000 lb. tractive force, and eight-coupled locomotives with relatively large drivers have been built which develop more than 60 cylinder horsepower per 1,000 lb. of tractive force.

What Is a Modern Locomotive?

Among the factors which have made it possible to develop relatively high horsepower in locomotives of high tractive capacity the most important is the four-wheel trailer. This has removed the limit on grate area and firebox volume which was imposed by the load-carrying capacity of a single pair of trailer wheels. The increases in grate area and firebox volume have made possible the release of large quantities of heat at relatively low—and, therefore, efficient—rates of combustion, which means marked economy in fuel consumption under average working conditions and a marked increase in ultimate power capacity.

With this major step in locomotive evolution have been combined other capacity and efficiency increasing developments, most of which have been well established for some time. But with the increase in capacity which the removal of limitations on the firebox size made possible, they have become more essential than before. Without them it would be difficult to build a well-proportioned boiler of sufficient heat-absorbing capacity to utilize the possibilities of the firebox. The increase in the proportion and distribution of superheating surface developed in the Type E superheater has been used effectively for this purpose in many modern locomotives. The Thermic Syphon has also contributed in this respect, the positive and rapid water circulation which it induces increasing the heat-absorbing capacity of the boiler. A further factor in increasing useful boiler output without a corresponding increase in size and weight is the heat reclaimed by the feedwater heater. Increases in boiler pressure have also contributed to capacity and economy, the use of special steels permitting such increases without appreciable increases in weights. Improvements in drafting and in grates are now being made which are playing an important part in increasing economy and useful capacity.

The development of the mechanical stoker, which about twenty years ago removed the barrier to a further increase in sustained locomotive capacity imposed by the physical limitations of hand firing, has since kept pace with the demands for more capacity. It has met demands for firing rates which will probably remain in advance of all special cases involving unusual conditions for many years.

While the changes in the design and appurtenances of the boiler are the most marked features of the modern locomotive, developments affecting the use of steam have contributed materially to the attainment of high horsepower output in relation to locomotive weight and cylinder tractive force. Valve motion designs which permit long valve travel have increased effective port openings, particularly at short cut-offs and high speeds. By permitting a less restricted flow of steam to the cylinders under these conditions they have been invaluable in the development of high sustained horsepower output. The limited cut-off reduces the demand on the boiler when developing maximum tractive force at slow speeds and increases the speed range within which high values of tractive force may be sustained. Within the range of average working conditions in freight service this contributes largely to fuel economy.

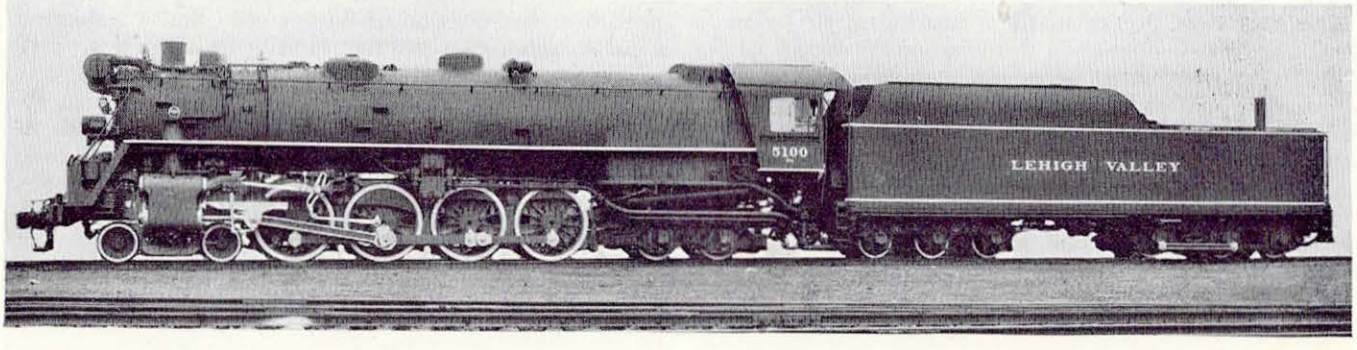
The high horsepower output per unit of weight and per 1,000 lb. of maximum cylinder tractive force characteristic of modern locomotives is sufficient to move at high speeds more tonnage than can be started or handled over grades with the traction provided by the weight on the drivers. The booster provides additional traction under these conditions, where maximum tractive force is required and slow movement is permissible, which are usually of relatively short duration.

Such are the principal factors which have contributed to an intensive utilization of weight and space which characterize modern locomotives. Most of these factors are incorporated in all of these designs, and all of them have been incorporated in some of these designs. Such locomotives, when compared with older locomotives of equal or greater weight on the driving wheels, have repeatedly demonstrated their ability to handle more tonnage at higher speeds and with marked fuel economy.

Why It Decreases Operating Costs

Thus far the increase in capacity which is characteristic of modern locomotives has been stressed, because increasing unit capacity of locomotives has always been the most effective means for decreasing operating expenses in the conduct of freight transportation. The average freight-train load on the railroads of the United States has been steadily increasing for almost forty years and many opportunities for savings in that field are still available to modern motive power. Such increases, however, can no longer be made economically at the expense of maintaining relatively high average speeds. Long freight trains at slow speeds cannot be moved over busy lines without excessive delays from passenger-train interference. Excessive delays are always attended with a long chain of increased expenses, including crew overtime, increased fuel consumption and increased locomotive maintenance. Modern locomotives, compared with older locomotives with the same number of coupled axles, have permitted increases in train loads of from 25 to 40 per cent, with substantial increases in train speeds.

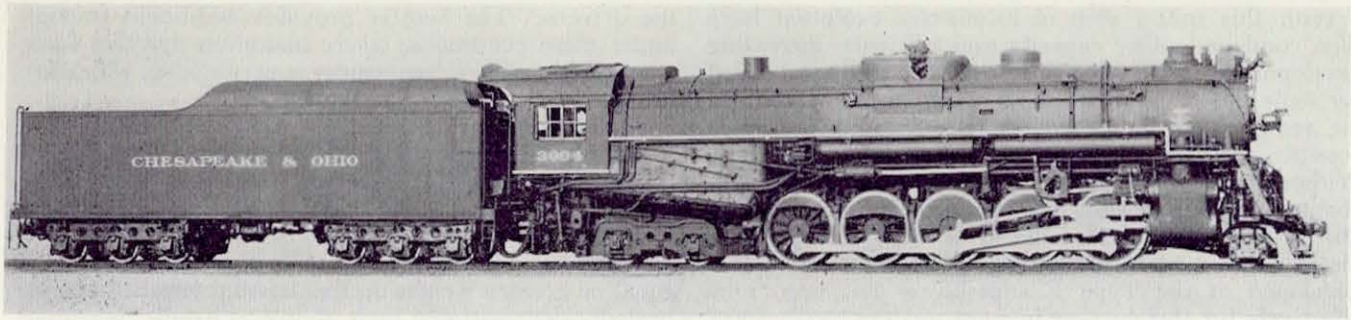
The economies of modern power do not stop with those following directly from increased train loads, however. Practically all the features contributing to the increase in capacity of modern locomotives have contributed also to increased locomotive efficiency. Indeed, the contribution to capacity of many of them is indirectly the result of the increases in efficiency which they are designed to produce. Modern locomotives, in comparison with locomotives ten or fifteen years old, have demonstrated their ability under a wide variety of conditions to effect reductions in unit fuel consumption of 30 to 40 per cent.



This Locomotive Has Proved Its Adaptability to Heavy Fast Freight and Heavy Passenger Service

Factors Reducing Maintenance Costs

Twenty years ago, when the development of increased locomotive capacity was approaching the limits of weight and size, the increase in the cost of maintenance with the increase in weight and size was greater in proportion



A Freight Locomotive Which Equals in Capacity a 2-8-8-2 Single-Expansion Articulated Locomotive

than the increase in capacity. The intensive development of capacity per unit of weight which has produced the modern locomotive has been accompanied by improvements in mechanical design which are effecting reductions in maintenance cost per unit of traffic handled. In this respect the locomotive bed casting, combining in a single unit the frames, cross members and cylinders, has eliminated the necessity for the maintenance of a large number of heavily stressed bolted joints which constituted a large item in class repairs. It has, furthermore, provided a foundation for the running gear, the alignment of which "stays put." Better methods of counterbalancing prevail and the larger driving wheels of modern freight locomotives have removed the limitations on counterbalancing imposed by the small diameter of drivers usually employed in the older freight power. This means much in reducing the wear and tear on track, as well as on running gear.

Improvements in lubrication are also contributing to reduced costs of maintenance and servicing of these locomotives. The use of force-feed lubrication on shoes, wedges and hub liners is reducing the frequency with which wear on these parts must be restored. The use of Alemite fittings on motion work is insuring better lubrication of these parts and eliminating the necessity for the use of the oil can while a locomotive is en route. The pressure-gun method of applying hard grease to crank-pin bearings has reduced the labor required to fill rod grease cups and has assured an adequate supply of grease to these bearings. Better materials are also contributing to reductions in maintenance costs. The possibilities of special materials for cylinder and valve chamber bushings and packing rings has been well established for some time. The use of roller bearings and of special steels permitting harder bearing surfaces is receiving attention and may be expected to effect further improvements in this direction. The tandem main-rod construction, developed for use with the limited cut-off, has contributed to longer running-gear life by the distribution of main-rod loads over the crank pins of two or more axles. This has had a beneficial influence on the life of the crank-pin bearings and driving-wheel journal boxes.

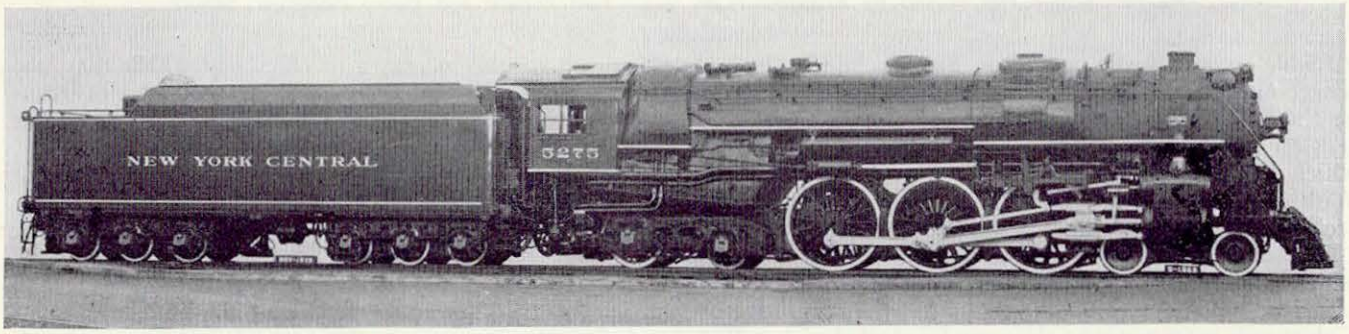
All of these factors are combining to increase mileage between shoppings and to reduce expenditures for running repairs, as well as for classified repairs, when locomotives are brought into the back shops.

That the improved characteristics of modern locomotives can be translated into large dollars and cents economies in train operation has been demonstrated on many railroads. In passenger service the scope of the opportunities depend on the number and character of the schedules. Where the business demands the frequent running of trains in more than a single section, modern locomotives of high horsepower capacity reduce train miles. Their capacity in this respect has been effectively utilized in handling milk and express trains. Where helper service has been regularly required, their sustained capacity permits them to meet the schedules without help. Their availability is higher and they can be reliably employed on long runs.

Their Economic Value Is Established

In freight service modern locomotives have proved their economic value under a wide variety of operating conditions. On the Texas & Pacific modern ten-coupled locomotives, replacing 2-10-2 locomotives built prior to 1920, on a division with a succession of grades running from 1.1 per cent to 1.4 per cent, permitted an increase in train load of 45 per cent with an increase in average speed over the division of 33 per cent, and a reduction in fuel consumption per thousand gross ton-miles of 42 per cent.

On the Illinois Central, modern eight-coupled locomotives, replacing locomotives of the 2-10-2 type built in 1922, operating over a relatively level division, increased train loads 5.3 per cent—from 4,900 to 5,200 tons—with an increase in average speed from 15.75 to 18.8 miles an hour, a reduction in fuel consumption per thousand gross ton-miles of 37 per cent, and a reduction in train operating cost per thousand gross ton-miles of about 34 per cent.



A Passenger Locomotive Which Develops a Cylinder Horsepower for Each 80 lb. of Total Weight

On the Atchison, Topeka & Santa Fe, a modern ten-coupled locomotive, compared with older locomotives of the 2-10-2 type, operating on a division passing over a mountain divide, had demonstrated its ability to handle approximately 15 per cent more train load in 9 per cent less time and with 17 per cent less fuel per thousand gross ton-miles.

On another railroad 50 modern eight-coupled freight locomotives replaced 34 of the 2-10-2 type and 30 of the Mikado type on four operating districts. They handled 10 per cent more tonnage than the 2-10-2 locomotives on the districts formerly operated with these locomotives and 25 per cent more tonnage than the 2-8-2 locomotives where these locomotives were formerly used. Time over the line was substantially reduced and the savings in fuel indicated an average of about 30 per cent per thousand gross ton-miles for the territory as a whole.

These cases all represent the application of modern locomotives of well established types, the proportions of which do not vary greatly. The operating economies which they have effected under the wide variety of conditions represented have earned returns on the gross investment in the new power which may be conservatively estimated to lie between 15 and 30 per cent.

The principles involved in the modern locomotives, however, have been incorporated in less standardized designs to meet the severe operating conditions of heavy mountain divisions. In one such case a single-expansion articulated locomotive, built to develop over 130,000 lb. tractive force, replaced heavy eight-coupled locomotives of relatively modern design, permitting an increase in tonnage of almost 25 per cent and an increased average speed of 60 per cent, effecting net savings in wages, repairs and helper service which will pay for the locomotives in less than ten years.

The return on the investment in modern locomotives resulting from the operating economies which they make possible, however, is not the only justification for their installation. In at least two of the cases mentioned the reductions in time over the road which followed their installation were material factors in securing additional traffic.

The economic value of modern locomotives cannot be calculated in general terms. Each case must be the subject of individual study. What has been accomplished under a wide variety of operating conditions, however, is sufficiently challenging to justify the initial assumption that any freight locomotive ten years of age or older is obsolete. With the burden of proof thus placed squarely upon it, let the old locomotive justify itself if it can.

In Next Week's Issue

Modern mechanical stations under automatic control will deliver fuel to locomotives at an expense much less than that incurred in operating older facilities. Locomotives can also be coaled in much less time, the coal is delivered with less breakage and segregation and the outlay for plant maintenance is less. Corresponding economies can be realized by the installation of modern cinder handling plants which, like coaling stations, are available in sizes and capacities suited to almost every conceivable requirement as to service demand. Specific cost records afford a definite conception of the economies to be realized by the construction of modern coal and cinder plants.

Recapture Case in Court

WASHINGTON, D. C.

A STEP toward bringing about a court review of the Interstate Commerce Commission's recapture-valuation methods has been taken by the Richmond, Fredericksburg & Potomac, which on November 11 asked the supreme court of the District of Columbia for an injunction restraining J. R. McCarl, comptroller-general of the United States, from withholding payment of money due it for mail transportation for the government to apply on the $696,705 the commission is attempting to recapture from the company as representing one-half its net earnings in excess of 6 per cent for the years 1922 and 1923.

The R. F. & P. case was the first in which the commission issued a final recapture-valuation order in April of this year, after its unsuccessful attempt in the St. Louis & O'Fallon case, although it has since issued final orders in one or two smaller cases. In the O'Fallon case the Supreme Court held invalid the commission's method of adding later investment to a base valuation at pre-war prices without allowance for cost of reproduction at current prices, but there are many other points involved in its valuation methods which some of the railroads would like to get into court, one of them being the question of the deduction of about 20 per cent for depreciation. In the R. F. & P. case, however, both the commission and the company seem to have been sparring to avoid taking the matter directly to the courts on the issue of the merits of the valuation.

After the commission had issued its order last April directing the company to pay the amount within 90 days, the company let the date go by without making payment. Instead of suing for the amount, however, Chairman Brainerd of the commission wrote a letter to Comptroller-General McCarl suggesting the offsetting against the carrier's indebtedness under the recapture order of any sums which might be payable to it for services performed for the United States.

"If the commission is called upon to institute legal proceedings for the collection of these funds in this and other cases which will arise under the act," he said, "the recovery of the funds and the administration thereof by the commission in accordance with the intention of Congress will unquestionably be subjected to serious delay." He added that the carrier had a clear-cut and well-understood remedy, if it desired to contest the order, by bringing an action in the district court to have the order set aside, and that the commission also might resort to legal means to enforce the payment of the sum, although he said there is no precedent by way of legal decision indicating clearly the appropriate remedy for enforcing the order.

The company in its application for an injunction said that McCarl had refused to issue vouchers for the payment of $71,453 due it for carrying the mails.

In the R. F. & P. case the commission avoided the pitfall into which it had walked with its eyes open in the O'Fallon case, in which the court held it had not accorded proper weight to cost of reproduction, by allowing 75 per cent weight to cost of reproduction and 25 per cent to original cost, both less depreciation. At least its figures indicated that it had done this but the commission carefully refrained from saying that it had done so or from committing itself to such a policy for other cases. It said that consideration must be given to both factors but that the weight to be accorded to each should vary in different cases.

Hurley Studies Barge Cotton Rates

Administration now has opportunity to make good its repeated statements that barge service should not compete essentially with railways

WASHINGTON, D. C.

A STRIKING example of the manner in which unregulated and subsidized water and highway transportation can play havoc with a carefully built-up rate structure established by Interstate Commerce Commission regulation of rail rates is afforded by the controversy which has been put up to the Secretary of War by a reduction in cotton rates proposed by the Inland Waterways Corporation. Although the commission's rate structure included many reductions the trucks have been taking so much of the cotton traffic at still lower rates that the railroads themselves reduced many rates to meet the competition and now the federal barge line is proposing still further reductions that would tend to disrupt still further the entire cotton rate adjustment.

The Hoover administration now has squarely before it an opportunity to make good on repeated statements by the President and successive Secretaries of War that government operation of barge service on the Mississippi river was not intended to be essentially competitive with rail service or to hurt the railways. From all indications, however, it is having some difficulty in deciding the issue raised by the proposal of the federal barge line to put into effect a rate on cotton intended to divert to the barge line about all the cotton it could handle, which has now been under suspension for over a month.

A report finding that the Inland Waterways Corporation could earn a net revenue of more than one-third out of a rate of $1 a bale on cotton in 2,000-bale lots from Memphis and other points on the Mississippi river to New Orleans, but that such a rate would divert so much traffic from all-rail and rail-barge routes to truck-barge routes as to operate to the great disadvantage of the rail carriers and cause increased deficits for many of them is under consideration by the Secretary of War, Patrick J. Hurley for the purpose of determining whether the rate, now under suspension, shall be restored. The report was submitted by Nuel D. Belnap, of counsel for the Inland Waterways Corporation, who was appointed as a representative of the Secretary of War to conduct a hearing on protests against the reduced rate and report as to the facts, after the rate was suspended on October 16 by the Acting Secretary of War following protests made by railway executives to President Hoover and to the Interstate Commerce Commission. The report was made public on November 12 after the Secretary of War had also taken under advisement in connection with it a report on the same subject by the Board of Advisors of the Inland Waterways Corporation, which recommended that the rate be put into effect.

Later another report as to the facts was asked of the Interstate Commerce Commission, which was requested to furnish the answers to a number of rate questions to assist the Secretary in reaching a conclusion since the War Department is not equipped with rate information. Although the commission was asked only as to the facts it is understood that the kind of facts desired are of the kind as to which the commission is accustomed to announce conclusions only after a weighing of conflicting testimony. The Secretary of War is embarrassed not only by conflicting testimony but by conflicting politicians.

The Belnap report, based on hearings held at Memphis on October 22, 23 and 24, and dated October 31, while finding that the reduced rate originally established by the barge line on October 6 would be profitable to the barge line, the cotton growers and the truckers, at the expense of the railroads, said that it would also be disadvantageous to inland communities away from the river at the expense of those on the river banks and would divert cotton tonnage from other ports to New Orleans, in addition to destroying relationships prescribed by the commission.

One difficulty faced by the Secretary of War in his efforts to act as a rate arbiter is the question as to how much cotton is likely to be diverted to barges other than those of the federal barge line but also operating on the river highway maintained by the government, in connection with the ever-increasing number of trucks operating on highways created and maintained largely by the taxpayers generally, even if the waterways corporation is not permitted to reduce its rates. In fact it has been said that the reduction proposed by the barge line was intended to meet the reductions made by rail lines to the Gulf ports in their efforts to meet truck competition and that much of the cotton will be moved by trucks and barges anyway. However, L. W. Childress, president of the Mississippi Valley Barge Line, a private company, said at the hearing that his line could not operate at a profit at the rates which the federal barge line has proposed and that if the government applied the principle sought to be applied here to other kinds of traffic it would put his line out of business.

The report itself made no estimate of the probable revenue losses to the rail carriers, although it cited several estimates, including one that the carriers west of the Mississippi would lose approximately 900,000 bales of cotton, on which the loss in revenue would be $3,500,000. This estimate Mr. Belnap appears to consider somewhat excessive although he says there is no question but that the revenue losses would be substantial. The report finds conflicting evidence as to how much cotton would be handled by barges other than those of the government line if the proposed rate should not be made effective but says that the quantity is likely to be "extremely substantial."

Although the report shows the total operating costs of the Inland Waterways Corporation in 1930 to have been 5 mills per ton-mile for 1,202,293,516 ton-miles, and the transportation expense to have been 3.2 mills, the transportation cost for hauling cotton in barge lots was placed at .8 to 1.5 mills per ton-mile. Adding 18 cents per bale for terminal expense at Memphis and 12 cents for similar costs at New Orleans, the total cost per bale was estimated at 60 cents. For smaller lots the cost was placed at 83 cents a bale. On grain the barge line has a rate as low as 7 cents per hundred between Memphis and New Orleans.

Secretary Hurley said on November 13 that he in-

tended to "take his time" and to make an extended study of the probable effect of the reduction before rendering his decision and that it might be necessary to employ the facilities of the Interstate Commerce Commission. He said he had received many protests against favoring a limited section of the country and that he did not want to "create a small situation which would affect a greater one." Several Senators also have taken a hand in the matter, some of them in fear that the case may serve as a precedent as to other barge rates, and have protested to the Secretary of War against the continued suspension of the cotton rate. Senator Shipstead, of Minnesota, after protesting to the President, said he had been assured that the suspension was only temporary. Senator Brookhart said that if the suspension is made permanent he will demand a Senate investigation, and he has announced his intention of proposing an amendment to the law to enable the Inland Waterways Corporation to operate on the Ohio river or on any waterway on which it shall be deemed practicable for barges to operate.

An abstract of the Belnap report follows:

On October 6, the Federal Barge Lines established from Memphis, Tennessee, and Helena, Arkansas, to New Orleans, Louisiana, port-to-port rates of 20 cents per 100 pounds ($1 per bale) on cotton compressed in high density bales, and of 25 cents per 100 pounds ($1.25 per bale) on cotton compressed in standard density bales, such rates to apply only when 2,000 bales as a minimum are tendered on one bill of lading. Protests having been received from competing rail carriers, the rates so established were, at the direction of the Acting Secretary of War, suspended on October 16, pending an investigation into the propriety thereof.

This year something in excess of five million bales of cotton will be produced in the states bordering the Mississippi river. While estimates vary, some million and a half to two million bales of that production are grown within a radius of 150 miles from either Memphis or Helena, that area being hereinafter referred to as Memphis territory. Heretofore the cotton from this area has moved largely to the Carolinas and to New England via all-rail routes for domestic consumption, and via all-rail routes and rail-and-barge routes to the gulf ports for export. The existing all-rail rate structure on cotton is maintained pursuant to orders of the Interstate Commerce Commission, a revision pursuant to such orders having been made effective this year.

The Federal Barge Line maintains a rather complete structure of joint through rail-barge rates on cotton from interior points, via either Memphis, Helena or Vicksburg, to New Orleans, such rates, with some few exceptions, being made on the usual differential basis, *i.e.*, less than contemporaneous all-rail rates by an amount equal to 20 per cent of the all-rail rate between the ports where the barge line handles the traffic. The differential observed in respect of rail-barge rates applying via Memphis or Helena is 12 cents per hundred pounds, the all-rail rate from Jackson, Miss., to New Orleans, for example, being 75 cents, and the barge-rail rate 63 cents, both per hundred pounds. The rates just named likewise apply from Memphis, Tenn. Such rates include 15 cents as representing the cost of compressing the cotton. Therefore, the net amounts thereof to cover the transportation service rendered are 60 cents via all-rail routes and 48 cents via the barge route. These are the equivalent of $3.00 per bale all-rail and $2.40 per bale via barge.

By agreement with the carriers, and out of the existing joint through rail-barge rate structure, the Federal Barge Line receives 20 cents per hundred pounds ($1 per bale) gross revenue for its service from either Memphis or Helena to New Orleans.

This year there has been a very substantial increase in the trucking of cotton, both into and out of compress points, not only in Memphis territory but in the cotton producing territory adjacent to the Gulf ports. In the Memphis territory the trucking costs are such that a producer or dealer can truck cotton either from point of production or from a compress point to river landings at a cost of approximately one cent per bale per mile. For a haul of 150 miles this would mean a trucking cost of $1.50 per bale or 30 cents per hundred pounds. West of the river 80 per cent of the cotton now at concentration points has been trucked in. East of the river the proportion, while not so great, is extremely large, particularly as compared with other years.

The proposed rates, when combined with the existing level of trucking charges, would produce aggregate charges from interior points to New Orleans substantially below those now provided by the existing joint through rate structure. For example, the existing rate structure provides on cotton, including the cost of compression, from Jackson to New Orleans, $3.75 all-rail and $3.15 rail-and-barge. The truck charge from Jackson, at which there is a high density press, to Memphis, including the compression charge, is $1.75, which, plus the $1 rate beyond, would make the total charge $2.75 per bale. Such total charge is $1 per bale less than the existing all-rail rate and 40 cents per bale less than the existing joint through rail-barge rate.

Arguments Pro and Con

Those in support of the suspended rates urged (a) that the rates are necessary to move the traffic, (b) that the cotton producer would benefit therefrom by receiving more money for his crop, (c) that the rates would yield the Federal Barge Lines a substantial profit, (d) that the rates would return to the Barge Line a greater net revenue, costs of handling and transportation being considered, than the Barge Line now obtains when it participates in the transportation of cotton under joint through rail-barge rates, (e) that the suspended rates are fairly comparable with rates maintained, for port-to-port movement on cotton, by other water carriers on the Mississippi river and by the Federal Barge Lines and other water carriers on other streams, (f) that the suspended rates are fairly comparable with the port-to-port rates maintained by the Federal Barge Line on other commodities, and (g) that the suspended rates are necessary from the Barge Line's standpoint to permit it to compete for traffic with other Mississippi river barge lines.

The arguments advanced by the rail carriers and inland interests in opposition to the proposed rates fall under the following headings. It is urged (a) that the result of the suspended rates would be to completely disrupt the rate adjustment which the Interstate Commerce Commission has prescribed as a maximum reasonable and otherwise lawful adjustment, (b) that the rail carriers would suffer extreme losses of tonnage and of revenue at a time when they can ill afford to bear such losses, (c) that the ultimate result of the suspended adjustment would be to promote the growth of points on the Mississippi river at the expense of inland communities and thereby destroy investments, and (d) that the effect of the suspended rates would be to intensify unregulated truck competition.

Some shippers objected to the requirement that the minimum amount to be shipped under the suspended rates is 2,000 bales, urging that with such a requirement the smaller shipper and dealer would be put out of business.

For convenience, there has first been set out in numbers 1 to 8, inclusive, the findings and conclusions of fact as to matters relied upon by the proponents of the suspended rates, followed in numbers 9 to 16, inclusive, by findings and conclusions of fact as to matters relied upon by those who appeared in opposition to the whole, or part, of the suspended schedules.

Findings and Conclusions

(1) The suspended rates would open up to cotton produced in the Memphis territory substantially increased markets, particularly in the export trade and in New England, and thereby the producers and dealers in cotton in the Memphis territory would benefit. The present difficulties at Memphis are largely the result of low cost trucking transportation within cotton producing areas adjacent to the Gulf ports, and the establishment within such areas of reduced truck-competitive rail rates which permit cotton from such areas to move to the ports on a much lower basis of charges than applies to cotton moving from Memphis territory under the existing all-rail or rail-barge rate structure.

(2) The immediate effect of the suspended rates was to increase the price received by producers for cotton by amounts ranging from $1.50 a bale downward, the increase in prices being relatively smaller at the points more distant from the river. It is probable, however, that, over a long period, the producer would not receive the entire benefit of the reduced transportation charges, but that, in the end he would divide it with the manufacturer purchasing the cotton.

(3) Conservatively computed, it would cost the Federal Barge Line for operating expenses attaching to terminal and line-haul handling 60 cents a bale for either high or standard density cotton from Memphis or Helena to New Orleans, leaving 40 cents a bale on high density cotton and 65 cents a bale on standard density cotton to cover traffic and overhead expenses and profit. Computations based on exact cost, and assuming that each tow handles 4,000 tons (the downstream

tow capacity being 10,000 tons or upward), shows a total cost of 45 cents per bale, leaving 65 cents out of the high density rate and 80 cents out of the standard density rate to cover traffic and general expenses and profit. In these computations nothing has been included for taxes, bond interest, or dividends to stockholders, this for two reasons. In the first place, such items are not operating expenses, and in the second place the Federal Barge Line does not pay such items. Based on the revenue and cost figures given for the Barge Line above, which are directed squarely to the traffic here involved, the suspended rates would leave to the Barge Line, after all operating expenses are paid, substantially more than a third of the revenue received. Evidence as to average costs on all traffic over the entire system, including both the Warrior river and the upper Mississippi river divisions, has not been considered in making the above finding, there being no showing of similarity of circumstances and conditions.

(4) Under the suspended rates, the Barge Line would receive gross revenue on high density cotton identically the same as, and on standard density cotton 5 cents per hundred pounds in excess of, the gross revenue received by it out of the existing joint through rail-barge rate structure on cotton. The cost of terminal handling at origin and destination on 2,000-bale lots is shown as 23 cents per bale (4.6 cents per hundred pounds) less than the cost of terminal handling on cotton in the smaller quantities in which it is commonly received under existing joint rates.

(5) The suspended rates do not appear out of line with rates quoted and maintained by other barge line carriers on cotton on the Mississippi river and other streams and by the Federal Barge Lines on the Warrior river. In so far as other carriers are concerned, however, there is no showing of similarity of circumstances and conditions to justify a conclusion as to what should be the relationship as between Federal Barge Line rates and the rates of other carriers.

(6) The suspended rates are three times or more higher than the Federal Barge Line maintains for port-to-port application on grain in full barge-load quantities on the lower Mississippi. They are also higher in varying amounts than the port-to-port rates maintained by the Barge Line on a great variety of commodities from Memphis to New Orleans. The line-haul costs of transporting cotton are identically the same as the line-haul costs on all other freight. There is undoubtedly a difference in terminal costs, but the exact extent thereof is not shown by the evidence. It may be concluded, however, that the terminal costs for handling cotton are relatively low, and that in most instances the net revenue which the Barge Line would receive from the suspended rates would exceed the net revenue received from handling other commodities in a port-to-port movement.

(7) It is impossible to come to any exact conclusion from the evidence of record as to how much cotton will be handled by barge lines, excluding the Federal Barge Line. The shippers of cotton expressed extreme confidence in their ability to move practically the entire amount of cotton which will go from Memphis territory to New Orleans for export by truck to river landings, and then by barge beyond at rates similar to those here under suspension, this irrespective of whether the Federal Barge Lines engaged in the traffic or not. The rail carriers expressed extreme doubt that such will be the case, pointing out that there has been no such movement by barge in previous years. This latter fact is, however, in part explained by the absence of truck or free cotton in previous years. It is freely admitted by all that a very large, if not the larger, part of this year's crop is moving to the concentrating points by truck, a situation which has not heretofore obtained. The best that can be said is that, in the absence of the Federal Barge Line, the quantity is likely to be extremely substantial. This is so because of the vast amount of cotton which is being trucked and which, consequently, can not economically move beyond except by barge, and because the shippers have purchased all of the available free cotton on the basis of barge rates approximately those here under suspension. Such shippers will naturally exhaust every means to secure barge transportation by some company or other since, if they are ultimately forced to pay all-rail or the joint through rail-barge rates, they will suffer very substantial losses. Unquestionably, there is a vast amount of water equipment on the Mississippi river and on streams tributary thereto.

(8) The suspended rates, when combined with truck transportation, will provide aggregate transportation charges from interior points to New Orleans for local or shipside delivery, and from interior points via New Orleans, thence water beyond to New England destinations, substantially below the reasonable and otherwise lawful rates recently prescribed by the Interstate Commerce Commission for all-rail application in the *General Cotton Investigation*, Docket 17000, part 3. Such charges will also be substantially below the existing joint through rail-barge rates made on the usual differential basis under the corresponding all-rail rates. If the existing joint through rates from Memphis territory to New Orleans are not reduced, such rates will become mere "paper" rates, in that they will carry little, if any, traffic. If such rates are reduced, it will provide for interior shippers located in Memphis territory, and for receivers at New Orleans, lower rates than are elsewhere applied for similar distances from other interior territories to other ports. Such a result would destroy the relationship as between interior territories and as between ports which the Interstate Commerce Commission prescribed as lawful for the all-rail adjustment in the *General Cotton Investigation.*

(9) Generally speaking, carriers do not maintain either local or proportional rates between points served by them which are the equivalent of divisions received by such carriers out of the joint through rates in which they participate. The rail carriers contend, and rightly so, that it would be impossible for them to adopt for universal application any such scheme of rate making, and at the same time preserve their existing structure of joint through rates.

(10) The diversion of traffic from all-rail and from rail-barge routes to truck-barge routes will operate to the great disadvantage of the rail carriers serving the cotton producing areas in the states adjacent to the Mississippi river. This particularly includes the Missouri Pacific and the Chicago, Rock Island & Pacific railroads serving cotton areas in Arkansas and Missouri, the Illinois Central, Mobile & Ohio, Gulf, Mobile & Northern, which operate north and south railroads paralleling the Mississippi river through the Mississippi valley and which heretofore have handled a very substantial volume of cotton to the gulf ports, and the Louisville & Nashville and Nashville, Chattanooga & St. Louis railroads, which operate eastward out of Memphis, Tennessee, and have heretofore engaged in transportation of cotton from such territory by all-rail routes to domestic markets in the Carolinas and New England. Cotton constitutes a very important traffic relative to the whole for the carriers just named. For many of these carriers a reduction in revenue at this time means increased deficits rather than reduced profits, since some of them are not now earning enough to pay their operating expenses plus taxes and bond interest.

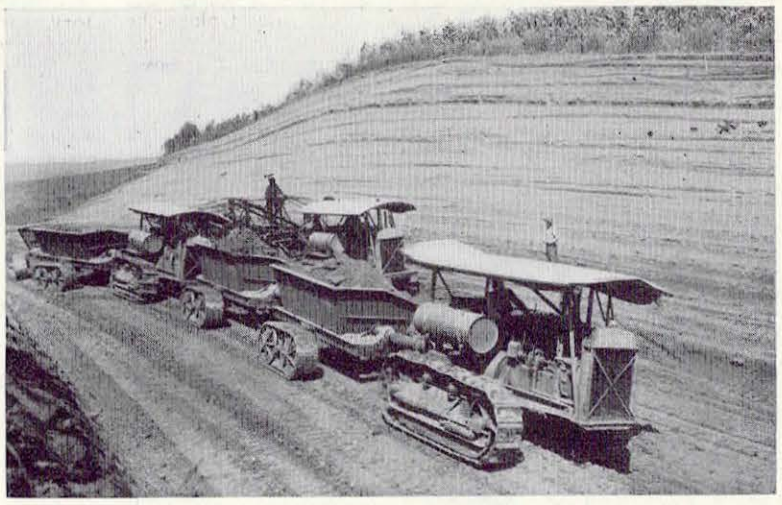
(11) It is difficult to determine the exact amount of traffic or the exact amount of revenue which would be lost if the suspended rates are made effective, primarily because the amount of traffic which the rail carriers would lose, if the Federal Barge Line rates do not become effective, cannot be determined with any accuracy. To the extent that other barges are able to handle the cotton, the losses will occur irrespective of what the Federal Barge Line does. The estimates made by the rail carriers indicate that, if cotton has available to it truck-barge combination rates on a level comparable with the suspended rates the carriers west of the Mississippi river will lose approximately 900,000 bales of cotton, on which the loss in revenue would be $3,500,000 For the Illinois Central, the loss is estimated as 300,000 bales, with a revenue loss of $750,000. For the Gulf, Mobile & Northern, a loss of 100,000 bales, and a revenue loss of $300,000. These estimates are based, however, on cotton produced in reasonable proximity of the Mississippi river throughout the whole length of the states of Mississippi, Louisiana, Tennessee, Arkansas and Missouri. No estimates were given confined to cotton produced within a radius of 150 miles of Memphis or Helena. Unquestionably, however, the rail-barge route has heretofore handled much of the cotton which, under the suspended rates, would move via a truck-barge route. As to such cotton, the losses to the rail carriers would, consequently, be confined to the share of the total rate received by them as their divisions, and would not extend to the total rate as applied to the total quantity diverted. While this factor would minimize the total revenue losses to the rail carriers, there is no question but that they would still be substantial. The rail carriers in this proceeding state that they do not have in contemplation any reduced rates from Memphis territory either to New Orleans, to other ports, or to other destinations.

(12) The handling of cotton by trucks in combination with barges from river landings will ultimately operate adversely upon, and to the disadvantage of, communities away from the river, hereinafter referred to as inland communities, particularly those interests in such communities who are engaged in the buying, selling, financing and compressing of cotton in their immediate locality. A corresponding advantage will be gained by those located on the river banks who are engaged in like pursuits. The total production in the states bordering the Mississippi river is in excess of 5,000,000 bales. By far a large portion of that cotton will unquestionably move all-rail to the Carolinas and to New England points, and the suspended

(Continued on page 788)

New Line Built into Kansas City

Joint project of Milwaukee and Rock Island roads involved heavy grading and novel method of placing fills



Contractors' Equipment Was Largely Motorized

ON July 1, the Chicago, Milwaukee, St. Paul & Pacific and the Chicago, Rock Island & Pacific placed in service a joint double-track line between Birmingham, Mo. and Polo, 37 miles, while beyond Polo, the Rock Island completed at the same time a single-track line on a new location north 34.88 miles farther to Trenton.

Through this construction, the Rock Island has eliminated 8.63 miles of distance and substituted ruling gradients of 0.5 per cent, compensated for curvature, for maximum gradients of 1.4 per cent in both directions between Trenton and Kansas City. There are 47.3 miles of double track on the new line, compared with none on the old line. The maximum curvature has been reduced from 5 deg. 30 min. to 1 deg. 30 min., and 2,851 deg. of central angle have been eliminated, while the number of curves has been reduced from 168 to 57. The total rise and fall has also been reduced from 3,113 ft. to 1,860 ft., a difference of 1,253 ft. The tonnage rating on the new line, with the freight locomotives now in use in this territory, is 4,540 tons, as compared with a rating of 2,250 tons on the old line, which represents an increase of 100 per cent in train load. There are only 37 highway grade crossings on the new line, as compared with 101 on the old route, all of which are with secondary roads, since the grades have been separated at all important highways, 31 in number. The improvement in the line of the Milwaukee between Polo and Birmingham is equally striking.

The construction of this line, which was completed at a cost of $14,500,000, of which the Rock Island paid $12,000,000 and the Milwaukee $2,500,000, involved the handling of more than 9,000,000 cu. yd. of material, including 1,560,000 cu. yd. of rock; the placing of 40,000 cu. yd. of concrete; and the laying of more than 184,000 lin. ft. of tile drains in cuts, including all rock cuts. All tracks are laid with 110-lb. rail on creosoted ties and are fully tie plated. The ballast consists of 12 in. of burnt shale.

New Route into Kansas City

This line not only provides these two roads with better operating characteristics, as compared with their former routes, but it also provides the Rock Island with a route over its own rails to a point only a few miles from Kansas City. Heretofore, the Rock Island has used the tracks of the Chicago, Burlington & Quincy from Kansas City to Cameron Junction, Mo., 57 miles. Under the new arrangement, Rock Island trains are diverted to the new line at Trenton, 47 miles east of Cameron Junction, although they will for the present continue to use the Burlington tracks and bridge over the Missouri river between Birmingham and Kansas City, 12 miles.

There has been no rerouting of trains on the Milwaukee between Polo and Kansas City, except so far as this has been required by double-track operation and by the line revisions that have been made.

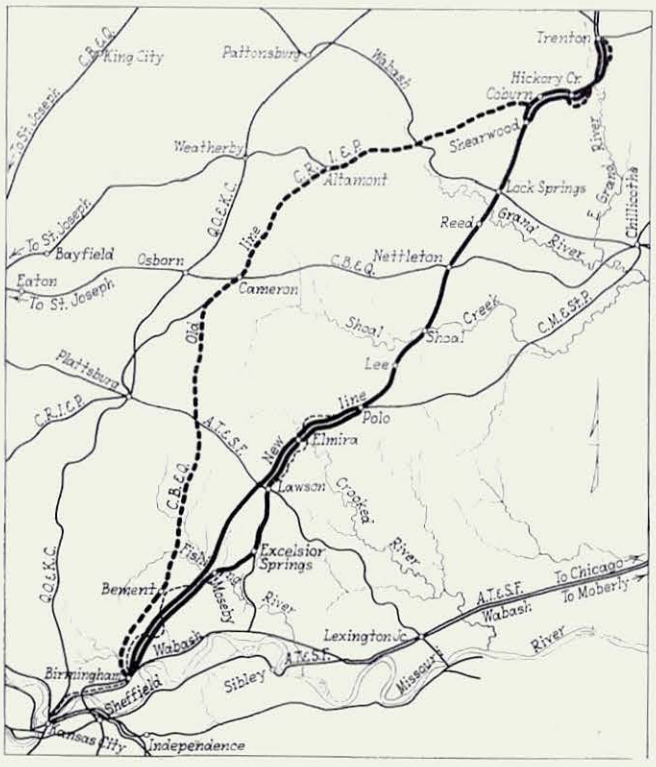
Character of Line

Between Trenton and Grand river, the Rock Island constructed 3½ miles of double track on a revised alinement, and reduced grades eastbound to 0.5 per cent. From Grand River to Hickory Creek, 3 miles, the alinement of the existing single track was revised to reduce curvature. The new line begins at Hickory Creek, although it follows the original line closely to Coburn, 5 miles, at which point it diverges and continues at an angle of about 30 deg. west of south through Polo to Birmingham. The original track between Hickory Creek and Coburn will be retained to provide for double-track operation between these points.

From Coburn to Polo, 29 miles, the new line, which is single track, is owned and will be used exclusively by the Rock Island. At Polo it connects with the Milwaukee, from which point there is jointly-operated double track to Birmingham, 37 miles. Each of the roads will, however, own one of the tracks exclusively. Since the existing single-track line of the Milwaukee was also one of heavy grades and sharp curvature, it was decided to abandon this line and construct an entirely new double-track line between Polo and Birmingham, except from Lawson to Moseby, 13 miles, where the grades are favorable to westbound movement, and from Polo to a point 4½ miles west (south) where only a few minor revisions of grade and alinement were necessary.

Accordingly, the Rock Island constructed a second

track on the Milwaukee right of way for 4½ miles west of Polo, and from this point a double-track line on a new alinement to Lawson, 7 miles. Because of the favorable grades, the original line of the Milwaukee is retained as a westbound track from Lawson to Moseby, so that it was necessary to construct only a



Map Showing Old and New Lines

single track between these points. This work was also carried out by the Rock Island, but on a widely divergent alinement. From Moseby to Birmingham, 13.5 miles, the Milwaukee constructed a new double-track line, abandoning all of its original track between these points.

In operation, freight trains will run on the left hand track in order to take advantage of the favorable westbound grades on the original main line of the Milwaukee between Lawson and Moseby. All passenger trains will use the westbound track between Lawson and Moseby, since this track passes through Excelsior Springs, while the new eastbound track is about four miles from the town.

The Grading Was Heavy

Owing to the rough character of the country traversed and to the fact that the general direction of the drainage is slightly toward the southeast, while the new line tends toward the southwest, the line generally follows the higher ground and is forced to much side-hill location, crossing many abrupt ravines from the ridges. As a result, there are many deep cuts and high fills. Cuts ranging from 40 to 50 ft. in depth are not uncommon, while the fills range up to 65 ft. in height. On the Rock Island part of the work the largest cut was 40 ft. deep and 1 mile long (single track), requiring the removal of 275,700 cu. yd. of earth and 35,000 cu. yd. of rock. Other cuts, however, ranged up to 6,300 ft. long and up to 60 ft. deep and required upwards of 300,000 cu. yd. of excavation. On the Milwaukee section, the largest cut was 4,600 ft. long and 65 ft. deep (double track), which contained 175,000 cu. yd. of earth and 170,000 cu. yd. of rock.

Deep strata of rock, mostly limestone, and heavy beds of shale, which was almost as difficult as rock to handle in grading, lie close to the surface, particularly at the north end of the line. This condition made it impracticable in many instances to lay down a grade line that would balance quantities without requiring the removal of an excessive yardage of these materials. As a result, the amount of borrow in some of the larger fills is unusually high, that for the Rock Island amounting to approximately 40 per cent of the total grading quantities. The Milwaukee, on the other hand, was more favorably situated in this respect, the only place where an unusually large amount of borrow was required being immediately north of Birmingham, where the line emerges into the Missouri river bottom.

Material Was Unstable

Perhaps the most interesting feature of the work was the method of placing the embankments. The original investigations made by both roads of the material available convinced them that, if placed in the usual manner, either with wagons or by dumping from a trestle, the embankments would be more or less unstable. This opinion was reinforced by long experience in maintaining roadbeds in this section of the country. As a consequence, the contractors were required to place all earth fills in horizontal layers, built up transversely from slope to slope, and compact them thoroughly. In addition, 2:1 side slopes were required on all embankments having heights of 25 ft. or more.

On the Rock Island work, all earth embankments were built in 2-ft. layers. An endeavor was made to solidify the embankment by means of truck haul so far as practicable, this haul being, in extreme cases, as much as 1½ miles. The use of trestles was held to a minimum and was permitted only where the use of trucks was uneconomical. The Milwaukee permitted 3-ft. layers where the material was placed by tractors and wagons, but required that both the loaded and empty vehicles be routed over the dump in such a manner that all parts of the area would be well compacted. If the haul was by train, the track was raised and shifted so that similar layers were built up transversely, extending from slope to slope, and the entire surface was rolled with a 10-ton roller or its equivalent, not less than three passes being required. A combination of these methods was permitted on high fills, but only the upper fourth of the height of the embankment could be put in by train haul.

High Degree of Motorization

Another interesting feature of the construction methods was the high degree of motorization of the equipment of many of the contractors. While both narrow and standard-gage locomotives and cars were used, particularly where heavy rock work was encountered, and a few of the subcontractors had team outfits, motor equipment predominated over a large part of the line. This equipment ranged from motor trucks of the ordinary dumping type, or tractors that replaced horses and mules for hauling dump wagons, to the largest type of crawler-mounted tractors which were used to haul 15-cu. yd. all-steel dump wagons, also crawler-mounted. Tractors were also used to pull the numerous elevating graders that were used at various places on the work. Through motorization of the grading equipment, much of the material was hauled economically over distances that would have been impossible with teams, so that, otherwise, locomotive and car equipment would have been necessary.

Likewise, the term steam shovel would be a misnomer, as applied to the excavating equipment, since

the prevailing types of shovels in use were powered with either gasoline or Diesel engines or had gas-electric drive. The Rock Island permitted the use of dragline excavators on certain sections of its work, as for instance, where the line occupies the bottom land of Otter and Shoal creeks for several miles between Nettleton and Polo, but required that the material be placed in 2-ft. layers and rolled with a 10-ton roller. Drag lines were found to be particularly advantageous in making channel changes on this section of the work. The Milwaukee, however, did not permit the use of draglines on any part of its work.

Grade Crossings Were Eliminated

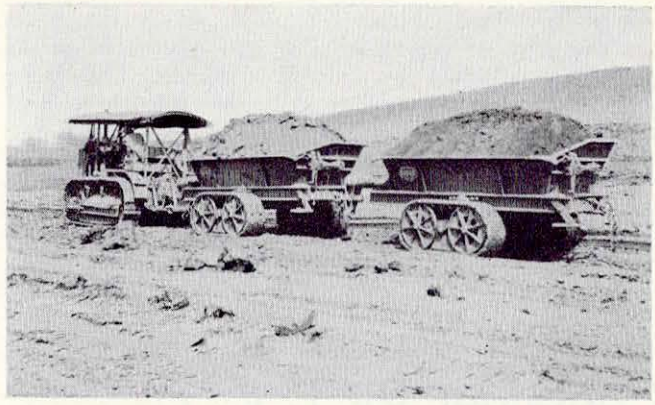
A policy of grade-crossing elimination was followed by both roads wherever this was practicable. Grades were separated at the crossings with all important highways and at a number of secondary roads. Many of the highways crossed by the line are little traveled, however, so that there was no economic justification for the seperation of these grades. There are 68 highway crossings on the line, at 31 of which the grades are separated. Four railways are crossed, the grades being separated at all of these crossings also, except with the Wabash, which is crossed at Lock Springs.

In general, the tracks are carried over the highways. The Rock Island installed permanent construction so far as practicable. Pile trestles were employed at these grade separations only when crossing bottom lands, and trestles were installed at other points only where there was some uncertainty with respect to future changes in local drainage conditions, which might necessitate changes in the sizes of the openings. Large reinforced concrete boxes were used under the heavy fills. On its part of the work, the Milwaukee used reinforced concrete construction or ballast-deck steel spans supported on concrete substructures for its highway grade separations. At one point on the Rock Island where an important highway crosses overhead near the middle of a deep cut, it was necessary to install 1,600 ft. of 84-in. Armco pipe outside of the limits of the cut to divert a stream and carry it parallel to the railway, the channel of which crossed and recrossed both the railroad and the highway.

Other Structures

While many deep valleys are crossed, most of the streams are relatively small, so that only a few major structures were required for waterways. Through riveted trusses and through and deck-plate girders were used at most of these crossings, the most important of which are at Grand river, West Grand river, Otter creek, Shoal creek, Fishing river and Rush creek. At the crossing of Crooked river at Elmira, the new line

Elevating Graders Were Used in Many Cuts



Crawler Treads Facilitated the Hauling of Heavily Loaded Wagons

is 90 ft. above the stream and crosses 45 ft. above the old line of the Milwaukee. This structure, which is the largest on the line, consists of a 150-ft. double-track deck riveted truss supported on buried concrete abutments. Each of the abutments consists of three 75-ft. two-rib arches carried on double columns, which are tied together with curtain walls and struts. The floor slab is supported by the pier shafts and the arches.

All track centers are 14 ft. The widths of roadbed on embankments are 20 ft. and 34 ft. for single and double track respectively, and in cuts these widths are 24 ft. and 38 ft.

Track was laid from points convenient for receiving the materials, as rapidly as the grading was completed. The Rock Island used a Robert's track laying machine for laying its first track and a Parsons rail crane for laying the second track and sidings. The longest run was made on March 4, when a gang consisting of 1 foreman, 7 assistant foremen and 157 men, including the machine operators, laid 8,734 ft. or 1.65 miles of track.

The entire line is ballasted with burnt shale. The material used by the Milwaukee for this purpose was obtained from burned-out mine-waste dumps at Jerome, Iowa, and Mystic, while the Rock Island obtained its supply from similar sources at Centerville, Iowa.

All Cuts Were Tiled

Owing to the generally unstable character of the soil and the seamy condition of the rock that was encountered, all cuts, including those in rock, were tiled before the track was laid. To insure thorough drainage of the roadbed and eliminate the probability of soft spots and water pockets, lateral drains were also laid to include every rail panel. This part of the work required more than 184,000 lin. ft. of tile drains, which were backfilled with locomotive cinders.

Work was started in July, 1929, between Hickory Creek and Nettleton, but little was done until the spring of 1930, when the remainder of the contracts were awarded by both roads. Track laying was completed on March 5, 1931. While the entire line was opened formally on July 1, the Milwaukee had been using the eastbound track between Liberty and Moseby since May 15, and began operation over both tracks between Birmingham and Moseby on June 29.

The work between Moseby and Birmingham was done by the Milwaukee under the general direction of C. F. Loweth, chief engineer, and A. G. Holt, assistant chief engineer. K. C. McFarland was engineer in charge. The new line north of Moseby was constructed by the Rock Island under the general direction of W. H. Petersen, chief engineer and H. T. Livingston, engineer of construction, with C. H. Gaylord as engineer in

charge. Petersen, Shirley & Gunther, of Omaha, Neb., had the contract for all grading and structures on the section constructed by the Milwaukee. The Rock Island's part of the line was divided into three general contracts, the Clinch-Mitchell Construction Company of Chicago, being awarded the work between Hickory Creek and Polo, while Winston Bros. Company of Minneapolis, Minn., completed the section from Polo to Lawson, and John Marsch, Inc., of Chicago, had the general contract from Lawson to Moseby.

Container for L. C. L. Shipments of Perishables

EXTENSION of railroad freight service for perishables to communities now unable to absorb such commodities in refrigerator carload lots—a market now being served only by express or by the rapidly growing refrigerated truck service—appears to have been brought within the range of practicability by a demonstration made last week on the Lehigh Valley and the New York Central. In this demonstration a commercial consignment of frozen fish was shipped in an insulated and refrigerated container, carried in an ordinary box car, over the Lehigh Valley from New York to Rochester, N. Y., and thence over the New York Central for delivery to a consignee at Syracuse, N. Y. The shipment, 800 lb. of salmon, was made by the Atlantic Coast Fisheries and was packed in a Church Freight Service container, a uniform temperature below 18 deg. Fahrenheit being maintained throughout the journey by solid carbon dioxide.

The insulated container with its shipment of salmon left Pier 38 of the Lehigh Valley in New York on the afternoon of November 11; it was placed in a regular Rochester merchandise box car which carried other l.c.l. freight. When the solid carbon dioxide was placed in it the temperature of the container was 76 deg.; within one hour it had dropped to 18 deg.; within two hours it was down to 16; and at the third hour it registered 15. When the container was opened in Rochester on November 13, 42 hours later, the temperature charts showed that the temperature during the trip had fluctuated between 15 and 18 deg., at no time getting above 18. Of the 50 lb. of solid carbon dioxide 5 lb. remained unmelted at the time of the opening in Rochester. The container was then recharged with 35 lb. of the refrigerant, and when the shipment reached Syracuse the following day, 19 lb. remained, the lower consumption on the Rochester-Syracuse trip being due to the lower temperature of the container at the time of installing the refrigerant. The temperature charts recorded an average of 16 deg. for the Rochester-Syracuse journey.

The Solid Carbonic Company, Ltd., manufacturers of the refrigerant, which they market under the trade name of Carbonice, worked out the refrigeration problem. The Carbonice was carried in a specially designed Icefin unit, manufactured by Fitz Gibbon & Crisp, Inc. The top and four sides of this unit are protected by heavy insulation, leaving only the bottom surface free to absorb heat. As a result the refrigerant evaporates down in wafer shape and with a constant cross section. This assures practically uniform refrigeration regardless of whether the unit has been recently charged or is almost empty. Temperatures are controlled through regulation of the rate of heat transfer. To raise temperatures, one or more resistance pads are inserted underneath the block of solid carbon dioxide, partially insulating it from the conductor plate. To lower temperatures, the number of resistance pads is decreased.

While the container used for the forementioned shipment is of the insulated type and thus adapted specifically to perishable shipments or to the handling in winter of products likely to be injured by freezing, a non-insulated container of similar dimensions for the handling of other commodities in l.c.l. service has been developed by the designer—Maj. Elihu Church of New York. The refrigerating unit is readily removable from the insulated container, so that the latter also may be used for the shipment of other commodities in the event that return loads of perishables are not immediately available.

The containers, manufactured by the Pressed Steel Car Company, are designed primarily as a substitute for the more costly ordinary forms of shippers' packing cases, and in addition to reduce handling, packing and trucking expense, and to effect economies in railroad freight handling. They are made of sheet steel, are 6 ft. long, 6 ft. 6 in. high and 2 ft. 8 in. wide—a size chosen to permit easy handling through warehouse aisles, while still being sufficiently large to accommodate all but the very small proportion of large l.c.l. shipments. They are mounted on rollers and, because of their size, can easily be moved by hand around a factory floor or on or off a motor truck and into and out of an ordinary box car. They are waterproof, can be locked securely and as much as 3,000 lb. of freight has been carried in one unit. The size was chosen after a study of l.c.l. traffic with the view of accommodating representative individual shipments, to provide a facility which may be used by shippers directly without recourse to forwarders or consolidators. The non-insulated container weighs about 400 lb. while the insulated type, lined with two inches of balsa wood and equipped with a regular refrigerator door, weighs less than 700 lb. Twenty of either type can be loaded into a 40-ft. box car.

The Church Container

Hearing on Railroad Practices Moves to Chicago

Rate divisions supplant switching absorptions—Shippers use railroad cars during free time without charge

A STATEMENT charging discriminatory and prejudicial practices and asking for an inquiry into the dissipation of line haul revenues, introduced by the Illinois Association of Merchandise Warehousemen, was one of the important developments during the hearing on Ex Parte 104, Part 2—An Investigation of Railroad Practices Affecting Operating Revenues and Expenses—which the Interstate Commerce Commission opened at Chicago on November 10. In addition, the testimony and cross-examination of witnesses at Chicago touched upon such practices as a division of rates whereby switching charges are prorated, the appropriation of railroad cars by shippers for intra-plant movements during free time without extra charge, the storage of coal in cars without demurrage, the pooling of switching service at industries as a measure of economy and the operation of universal freight stations for l.c.l. merchandise.

The investigation was conducted with a view to developing facts regarding railroad practices affecting operating revenues and expenses. From the cross-examination by W. P. Bartel, director of the Bureau of Service, who presided at Chicago, and by attorneys of the commission, it was apparent that the commission was in possession of pertinent information and, therefore, conducted the hearing so as further to develop the information on hand. From the nature of the testimony presented, it appears probable that additional inquiries will be conducted into practices not fully developed in these hearings and that special investigations may be made of practices that have proved to be of importance, in order that definite rules may be formulated. Among the latter practices are the storage of merchandise on railroad property, the use of cars by shippers during free-time, switching allowances and switching absorption.

One part of the hearing dealt with carload delivery services at team tracks and private sidings and embraced the spotting of cars. The spotting service was divided as follows: (1) Short line and industrial common carriers, (2) Industries with systems of plant tracks, (3) Ordinary private sidings and (4) Public team tracks. Industries with systems of plant tracks were further divided among those: (a) Upon which they perform their own spotting services and receive an allowance out of the railroad line-haul rates, (b) upon which they perform their own spotting without an allowance, and (c) upon which the carrier performs the spotting. The testimony at Chicago showed that the service performed at some industries is no more extended than that given at ordinary private sidings and public team tracks and that the switching charges for the same type of service vary in the same vicinity and in various parts of the country. It was also shown that many plants have always done their own switching and have received allowances, while others have performed their own switching for a number of years without allowances but are now given them, and that many plants never have received allowances although they have always switched their own cars. The testimony relative to allowances did not fully develop the reasons for the variation, competition being given as the cause of initial allowances. The granting of allowances was supported by the contention that the allowances made were less than the cost to the railroads of performing the service. Cross-examination produced suggestions to the effect that industrial crews are smaller and receive lower rates of pay.

Switching absorptions also received considerable attention at Chicago and upon the request of the commission for definite figures that will show the effect of absorptions on carriers' revenue, O. J. Rider, general accountant of the Baltimore & Ohio, explained that the gross freight revenues of that system in 1930, amounted to $179,000,000 as shown in account 101, and that the freight income totalled $173,000,000 the difference including terminal allowances of approximately $1,500,000, undercharges of $1,300,000 and switching absorptions of $2,879,000. It was contended by another witness that the absorption of switching charges is necessary to secure business.

Warehousemen Ask for Inquiry

A statement charging discriminatory and prejudicial practices and asking for an inquiry into the dissipation of line haul revenues was introduced at the Chicago hearing by G. M. McConnell for the Illinois Association of Merchandise Warehousemen. The statement follows: "The Illinois Association of Merchandise Warehousemen has long been greatly concerned over the fact that in numerous localities the rail carriers are extensively engaging in public warehousing activities under conditions that reflect discriminatory and prejudicial practices, substantial direct losses with resultant dissipations of the line haul revenues, and consequent inefficiency of operation as transportation companies.

"It is understood that the scope of the hearings in Ex Parte 104 does not contemplate an examination of the activities of the carriers in the commercial warehousing field. Therefore, the I. A. of M. W. respectfully petitions that the commission institute a special inquiry for the purpose of determining the extent to which the rail carriers are dissipating line haul revenues in making available commercial warehouse service at less than cost."

Rate Divisions Substituted for Allowances

The use of rate divisions in the Chicago territory was developed in the direct testimony and cross-examination of H. W. Byers, vice-president of the Chicago & North Western, and H. R. Wilkinson, general freight agent of the Chicago & Eastern Illinois. In this territory,

the largest switching district in the world, the division of rates was established in 1911, because of the "chaotic condition" existing, each carrier having its own rates and arrangements for switching. Under the present plan the payment to switching and terminal lines for switching and terminal facility service is usually made by allowing such lines a division of the line haul rates. The divisions allowed to such lines come out of the line haul revenue. Where the initial carrier receives a road haul on carload freight, including trap cars, from or to industries with private or individual side tracks located on its line in the Chicago district, the line haul rates have been extended to include the service from or to such industries. There is no additional cost to the shipper.

Shippers Can Appropriate Cars

During the cross-examination of G. F. Malone, superintendent of car service of the Baltimore & Ohio, Mr. Bartel developed the fact that shippers can appropriate railroad cars and use them for intra-plant shipments without charge. It was also shown that if a car is unloaded and loaded in plant service, thus affording free-time amounting to 96 hr., no charge is made for the portion of the free-time during which the car is idle or appropriated although Demurrage Rule 6 provides for a charge. When asked why no charge is made, Mr. Malone said that the railroads do not go out of their way to look for such cases.

Evidences of economy were also revealed at the Chicago hearing when several railroads serving the same plants explained their pooling of switching services. An example of this is the Argo plant of the Corn Products Refining Company, which has a 300-car capacity layout and which is served by the Indiana Harbor Belt, the Baltimore & Ohio Chicago Terminal, the Alton and the Belt Railway of Chicago. The switching is performed by the Belt and the expense is pro-rated on a per-loaded-car basis, at $10 per engine hour. At the Hegewisch plant of the Ford Motor Company, the New York, Chicago & St. Louis does all switching for that road and the Belt. At the Crane Company plant, which is served by the Atchison, Topeka & Santa Fe, the Illinois Northern, the Indiana Harbor Belt, the Chicago River & Indiana and the Belt, the C. R. & I. performs the switching.

Among other practices in the Chicago territory, the Belt Railway of Chicago operates two universal stations for l.c.l. merchandise and all carriers are permitted to use the service at published rates.

A practice which was shown at the hearing to be unprofitable to the railways is that of storing cars of coal at the mine. Shippers are permitted to load the cars and move them onto railroad tracks where they are stored until the coal is sold and can be shipped. This arrangement was commenced during the war and has been continued until the present time. Another development is the practice of absorbing switching charges on trap cars with a minimum of 6,000 lb. because of competition.

Another practice of importance developed at the Chicago hearing, is the prohibition of allowances in Wisconsin. This procedure dates back to October 17, 1929, when the Public Service Commission of Wisconsin, in its terminal allowance order, said, "The commission is very frankly of the belief that the prescription of a maximum allowance and payment to the industry of its actual expenditure monthly is neither a desirable nor a practical way of providing for payment for interchange switching. It would appear, therefore, that if a fair average charge per car were established, to be applied to each interchange car handled, such charge to be determined after a series of cost studies in different periods of a year, it woud be much more equitable to both carrier and shippers."

Hurley Studies Barge Cotton Rates

(Continued from page 782)

rates will not deprive interior compresses of an opportunity for competing therefor. The total receipts of cotton at New Orleans for the 1930-31 season, including not only cotton from states bordering on the Mississippi river but such Oklahoma and Texas cotton as may have been received, total less than 1,500,000 bales. The tendency of the suspended rates would be to increase the amount which New Orleans would otherwise receive.

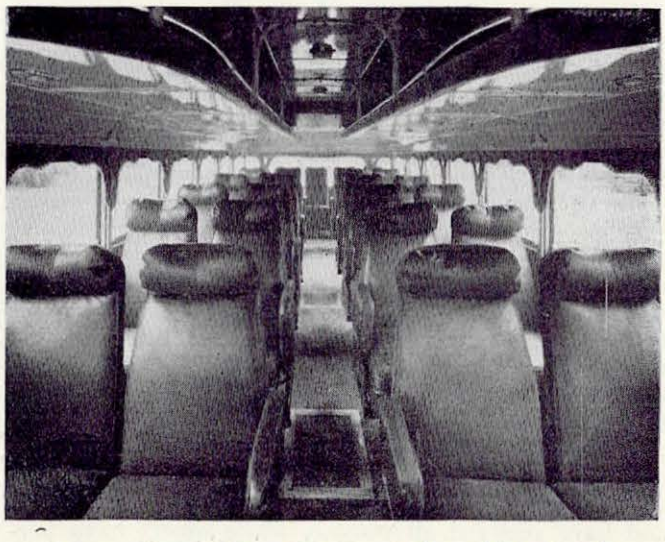
(13) The suspended rates, if restored, will have the effect of aiding the development of truck transportation. Inability to make finding No. 7 more definite renders it impossible, however, to determine the extent to which the restoration of the suspended rates by the barge line will develop truck competition beyond a point which would be developed anyway through the action of other water carriers in providing a means for barging cotton from the Memphis territory to New Orleans.

(14) It is a common practice for water carriers to maintain rates on round lots, i.e., those exceeding the ordinary rail carload, substantially below the basis contemporaneously maintained on smaller carloads. The Interstate Commerce Commission, however, has repeatedly declined to prescribe lower rates on cotton in quantity than on cotton any-quantity. If rates on cotton are restricted to a specific minimum, they will operate to the disadvantage of the smaller shipper. Apparently, however, interested shippers have agreed with officials of the barge line that, if the suspended rates on 2,000-bale lots are restored, the small shipper will be satisfied if he is accorded rates on a minimum quantity of 100 bales 6 cents per hundred pounds (30 cents per bale), in excess of the rates contemporaneously maintained on cotton in 2,000-bale lots.

(15) It is likely that a lower rate on high density than on standard density cotton will tend to develop high density facilities in the interior both on the river bank and at inland points.

(16) If the suspended rates are restored, it will reduce the aggregate transportation charges from interior points to New Orleans below those which now obtain. The effect will be to increase the proportion of the total crop which is shipped to New Orleans. The evidence of record does not, however, show the extent to which that diversion to New Orleans will be from other ports, or the extent to which it will be from destinations where there is a domestic consumption. It is likely that there will be both kinds of diversion.

* * *



Interior View of Interstate Transit Lines Motor Coach

Railroads File Pool Plan

Executives propose modifications of I. C. C. plan for rate increase on loan basis

WASHINGTON, D. C.

THE plan of the railroads for pooling the proceeds of the temporary freight rate increase offered them conditionally by the Interstate Commerce Commission as a substitute for the 15 per cent increase they had asked was filed with the commission on November 19, together with a petition for certain modifications in the plan as outlined by the commission. The principal change is that the railroads ask that the increased revenues involved, estimated by the commission at $100,000,000 to $125,000,000 a year, be regarded as loans instead of distributed outright. They also propose some detail changes in the rate increases suggested by the commission, including the conversion of proposed increases per car into equivalent charges in cents per net ton.

The plan is that worked out by the Advisory Committee of the Association of Railway Executives and approved at a meeting of the member roads in New York on November 13. It was filed in the name of the Association.

As submitted by the railroads the plan provides for the creation of a corporate agency, "The Railroad Credit Corporation," to collect and administer the fund. It would be incorporated in Delaware, with administrative office in Washington, would have twelve shares of stock of $100 par value, and twelve directors, five from the Eastern district, including one from New England, two from the Southern district, three from the Western district, one named by the directors of the American Short Line Railroad Association, and a director at large who would be president of the corporation.

While the certificate of incorporation proposed would give the corporation broad powers "to finance or participate in financing, through provision of credits (directly or indirectly) or otherwise, of common carriers by railroad throughout the continental United States, in such manner and on such terms as may seem expedient," and while the by-laws make provision for the issuance of bonds, etc., it is understood that these are included merely as customary powers of a corporation and have no special significance at this time. The certificate says the corporation would be organized primarily to facilitate the operation of the plan submitted to carry out the purpose suggested by the commission.

It is provided that the plan shall become effective only when those who have assented thereto all agree that a sufficient number have assented to make it operative.

The petition accompanying the plan points out that the commission's report in Ex Parte No. 103 is susceptible of two interpretations and that to treat advances from the fund as loans will relieve legal difficulties regarded as substantial. Whereas the commission in its report said that appropriate provisions should be made as to the accounts of carriers reporting separately but operated as part of a system, the railroad plan makes it apply to "carriers." Also the commission had provided that a road already in receivership or default should not participate in the plan and to this the railroad plan adds several other classes of carriers, including those able to meet fixed charges from earnings, other income or other resources, and carriers which, with the aid of a loan from the corporation, would still be unable to meet their fixed charges or to avoid a default. The fund is to be used to prevent, "so far as practicable" defaults by railroad companies in their fixed charges, whereas the commission had referred to "fixed interest obligations."

The commission is also asked to eliminate its requirement that any reduction in rates made after the plan is put into effect, shall be at the expense of the ordinary revenues of the carrier.

The principal part of the petition, signed by Alfred P. Thom, general counsel of the association, and by members of its law committee as of counsel, and the full text of the pool plan submitted as an exhibit, follows:

It is respectfully submitted that to treat the amounts distributed as gratuities is in no sense a necessary part of the plan or essential to the accomplishment of the Commission's purpose. The Commission's essential purpose is to prevent, by means of the fund to be created, defaults in fixed charges and consequent financial disturbance and receiverships. This can be done equally as effectively by treating the amount which each carrier receives from the fund as a loan as it could be by treating it as a gratuity. It is obvious that to treat the advances as loans does not in any degree increase the amount of the indebtedness of the recipient carrier. With the amount received, it is to pay off and extinguish its indebtedness in another form to an amount exactly equal to the amount received. It simply changes the form of its indebtedness from an obligation which, unless satisfied, will result in a default of a fixed obligation, with the consequent menace of a receivership and foreclosure, into an obligation free from these undesirable consequences.

It is proposed to make the loans on terms requiring the best available collateral in each case, including, if required by the Corporation (provided for in the plan), the pledge of the amounts due or to become due an applicant on distribution as provided in paragraph 14 of the plan and with discretion to the Corporation, in any case of important public interest, to relax the requirements of this paragraph. The obligation of the recipient carrier will be to repay the amount borrowed at such time as may be agreed upon between the applicant and the Corporation, not exceeding two years, fixed with due regard to the purposes of the plan, and shall be renewable for an additional period of not exceeding two years, at the discretion of the Corporation, and at all events shall be repaid before declaring any dividend to its own stockholders, except in cases where, by contract or otherwise, payment of a specific dividend as a fixed charge is involved, which would, if not paid, result in a default in respect thereto. Certainly it is just that the stockholders of the carrier earning the revenue by performing the service from which the fund arises, should be preferred in the ultimate disposition of it over the stockholders of the carrier which does not earn it.

To treat advances from the fund as loans will relieve legal difficulties which are regarded as substantial by those responsible for the management of the carriers and will remove serious obstacles in the way of carrying the plan into successful operation. This will involve no disappointment of the Commission's purpose, but rather will be in furtherance of it. It manifestly imposes no additional burden or charge upon shippers.

3. Attention is respectfully called to that portion of the Commission's report, on page 580, which reads as follows:

> The increases herein proposed should be accepted as an entirety. If, for competitive or other reasons, the carriers decrease any of the rates so increased, the amount of the decrease should be taken from the basic rates rather than from the earmarked increases provided herein.

It may be found that, for entirely sound and controlling economic reasons, the proposed increases in certain of the rates cannot be maintained. To keep them at the increased level may, in certain instances, be found to prevent traffic from moving or to drive it to competing transportation agencies. In neither of these cases will the proposed fund be benefited by the increase. At the same time, the carrier might be able to retain and move the traffic at the lower level of rates. In that event,

its position as a part of an essential transportation system would be strengthened. If, however, it is required to pay into the fund the difference between the revenue from the increased rate and the revenue from the basic rate, out of its present—or, as designated in the report, out of its basic—rate, it would be required to make the payment out of its present revenues and contribute the amount to a fund to be used by others. In that case, its position, as an essential transportation agency, would be weakened. This would involve a contribution to other carriers of revenues not growing out of increased rates, and would raise practical, if not legal, questions which would be avoided by the elimination of this requirement.

To make this requirement clearly indicates that the Commission is endeavoring to prevent reductions in rates once advanced, and thereby to prevent depletion of the fund, on the theory that a carrier may reduce its rate for an unjustifiable reason and consequently must suffer the penalty imposed of making the reduction out of its basic rate. It is submitted that this loses sight of the fact that reductions may not only be justified but may be necessary. It is inevitable that for good and sufficient economic reasons certain rates must be reduced. The Commission in its report clearly anticipates that the railroads, for their own protection, will be compelled to make reductions. To compel the carrier to make payments into the proposed fund out of revenues arising from present rates, seems to be justified only if the reduction in rates is improper, and to ignore the cases in which such reduction is necessary and inevitable.

It is accordingly respectfully submitted that the provision herein referred to be eliminated. Any improper reduction in a rate once advanced can be prevented by the Commission.

Rate Changes Proposed

4. Attention is called to the fact that the text of the provision on page 589, under the heading "Switching and Lighterage Charges," confines the power to make increases to charges for switching, It is not known whether lighterage charges were inadvertently or purposely omitted. It is respectfully submitted, however, that lighterage charges should be included with switching charges, and that, in neither case, should there be included such of these charges as are absorbed by the road haul carrier.

This exception is regarded as essential in order that, in instances where the road haul carrier absorbs the terminal switching or lighterage charge, there be not imposed upon it the necessity of paying the increased charge out of its present revenues.

Inasmuch as the proposed increase is to apply to all switching charges, the clause, without the exception, would compel the road haul carrier to shrink its individual revenues for the benefit of the fund even on classes of traffic on which an increase is not imposed.

The obvious purpose of the Commission was to increase the revenues of the carriers and not to apply the increase in cases where, instead of additional revenue to them, there is, in fact, diminished revenue because of the absorption by the line haul carrier of the increase in the switching charge and in the lighterage charge.

5. On page 588 of the Appendix, commodities of much importance are listed for increases in sums of three dollars and six dollars per car, respectively. Different carriers have cars of different capacities. Some are supplied with large cars, and some only with smaller ones. If a charge is expressed in dollars per car, irrespective of the car's capacity, it would be inevitable that shippers will desire cars of the greatest capacity or dimensions, and this would be to the serious disadvantage of carriers supplied only with the smaller equipment. It would create an arbitrary competitive advantage for those roads which have cars of exceptional size and capacity, and would result in demands for the application of part carload rates where two smallers cars are furnished by a carrier in lieu of the larger one available from some other carrier. There would thus result additional expense occasioned by unnecessary empty hauls and excessive switching required in order to furnish specialized equipment.

It seems possible to convert these per car charges into charges in cents per net ton, and if so it would solve the difficulty. It is submitted that this could be accomplished by changing the caption, on page 588, now reading:

> On commodities included under the following numbered descriptions there may be an increase of *$3.00 per car.*

to read as follows:

> On commodities included under the following numbered descriptions there may be an increase in cents per net ton to be determined by dividing the sum of $3.00 per car by the average car loading of each article included in such description as shown for all carriers in the United States, computing such average car loadings from reports of the Interstate Commerce Commission on freight commodity statistics for the year 1930; said amount in cents per net ton to be charged on the weight at which the carload charges are computed.

and by making a similar change in the caption preceding the surcharge of $6.00 per car, appearing on the same page.

6. On page 589 the following provision is made:

> In the case of less-than-carload freight, no increase shall be assessed for hauls for which the applicable or corresponding class rates are assessed on a basis of not more than 175 miles, and the increase for hauls over 175 miles and not more than 250 miles computed in like manner shall be 1 cent per 100 pounds.

The fact is that there are many class rate tariffs in which there is no indication as to the length of haul involved at a given rate, and the provision does not seem susceptible of practical application. Petitioner is advised that the Commission's purpose, as expressed in the foregoing paragraph from its report, could be accomplished, without any substantial change in the proposed rates, by substituting for the above quoted provision the following:

> In the case of less-than-carload freight, whether subject to class or commodity rates, increases shall be made applicable as follows:
>
> (a) Where class rates are subject to the Official Classification no increase shall be made in less-than-carload class or commodity rates between points where the first class rate in cents per 100 pounds is 70 cents or less; between points where the first class rate exceeds 70 cents but does not exceed 82 cents, an increase of 1 cent per 100 pounds shall be made; and between points where the first class rate exceeds 82 cents per 100 pounds, an increase of 2 cents per 100 pounds shall be made.
>
> (b) Where class rates are subject to the Southern Classification no increase shall be made in less-than-carload class or commodity rates between points where the first class rate in cents per 100 pounds is 91 cents or less; between points where the first class rate exceeds 91 cents but does not exceed 108 cents, an increase of 1 cent per 100 pounds shall be made; and between points where the first class rate exceeds 108 cents per 100 pounds, an increase of 2 cents per 100 pounds shall be made.
>
> (c) Where class rates are subject to the Western Classification no increase shall be made in less-than-carload class or commodity rates between points where the first class rate in cents per 100 pounds is 99 cents or less; between points where the first class rate exceeds 99 cents but does not exceed 117 cents, an increase of 1 cent per 100 pounds shall be made; and between points where the first class rate exceeds 117 cents per 100 pounds, an increase of 2 cents per 100 pounds shall be made.
>
> (d) The figures suggested take into consideration the respective levels of intra and interterritorial rates, as for example the through rates between Official and Southern territories prescribed by the Commission in I. C. C. Docket 13494.

It is respectfully requested that the foregoing rate limits be properly checked by the Commission and that the appropriate modification be made in the Commission's report in this proceeding.

Wherefore this petitioner respectfully prays that the foregoing modifications of the Commission's report in this proceeding be made and that the Commission give its approval to the plan herewith submitted.

Text of the Railroad Plan

1. A corporate agency to be created and organized, under the name of The Railroad Credit Corporation, for the purpose of collecting, receiving and administering the fund growing out of the increase in rates scheduled by the Commission for an increase in the Appendix to its report in this proceeding. It shall be incorporated under the laws of the State of Delaware. Its administrative offices will be located in the City of Washington, D. C. A draft of its proposed charter, or Certificate of Incorporation, and of its proposed by-laws is hereto attached. It is hereinafter referred to as the Corporation.

2. All carriers by railroad or by water, rates of which are subject to the jurisdiction of the Interstate Commerce Commission, may file tariffs providing for the rate increases specified in the Appendix to the Commission's report; and all such carriers by railroad assenting to the plan as in the next succeeding paragraph provided shall be participants in the plan as hereinafter indicated; but no carrier already in default as to its fixed charges, or which is in receivership, or which derives less than fifty per cent of its revenues from freight transportation, and no carrier by water shall either contribute to, or receive from the fund any amount whatever. The participants in the plan are hereinafter referred to as the participating carriers.

3. Any carrier eligible to participate, except as limited by the next preceding paragraph, shall, upon execution of its written assent to this plan, become and be a participating carrier hereunder and obligated to make payments into the fund in the amounts and at the times hereinafter specified, and shall thereby confer upon the Corporation full power and authority to deal with, administer and apply the fund, so paid to it, to and for the purposes of the plan and to do and perform any and all other things necessary or appropriate to carry out and effectuate its purposes.

4. The amount to be paid into the fund, by each of the participating carriers, shall be the gross revenue received by it from the increase of rates scheduled by the Commission to be increased in the Appendix to its report in this proceeding; provided, however, that if any participating carrier is required to pay a tax or taxes because of the receipt by it of revenue from the proposed increase in rates, it shall, upon payment thereof, be entitled to withdraw from the Corporation, and the Corporation shall refund to it, the amount of such tax or taxes. In no case shall a participating carrier be required to pay into the fund any amount (except interest on delayed payments) not derived from the increase in rates made pursuant to the Commission's proposal.

5. The amount derived from the increase in rates shall, as nearly as possible, be ascertained and stated by each participating carrier within forty days after the month in which it accrues, and shall be paid to the Corporation within ten days after the expiration of the forty-day period, to constitute a fund for the purposes hereinafter specified. Similar payments into the fund shall thereafter be made monthly and if not paid when due, the amount thereof shall bear interest at the rate of eight per cent per annum. Monthly report of such payments shall be made by each participating carrier to the Interstate Commerce Commission.

6. The expense of administration incurred by the Corporation shall be paid out of the fund.

7. The Corporation shall use the fund so provided to carry out the Commission's purpose to prevent, so far as practicable, defaults by railroad companies in their fixed charges. To that end, and subject to the exceptions hereinafter stated, it shall, upon the application of any participating carrier, if the amount in the fund at the time is sufficient for the purpose, make to the applicant such loan or loans therefrom as are necessary to enable it to meet its fixed charges and to avoid default thereon; but no advance or loan from the fund shall be made for any other purpose and no advance or loan shall be made—

(a) To a carrier already in default or in receivership;

(b) To a carrier which derives less than fifty per cent of its revenues from freight transportation;

(c) To a carrier which is able to meet its fixed charges from its earnings, other income or other resources;

(d) To a carrier which, with the aid of the loan from the Corporation, would still be unable to meet its fixed charges or to avoid a default.

(e) To a carrier by water;

(f) To a carrier which has not complied in full with its obligations under paragraph 4 of this plan.

In determining the amount of the deficiencies in the earnings of an applicant and the necessity for making it a loan, the amount actually expended for maintenance (but not the amount charged to operating expenses on account of depreciation and retirements) in the period from July 1, 1930, to June 30, 1931, shall be used as the maximum of its maintenance charges, unless in the discretion of the Corporation a different period should in a special case be justified.

It is not intended that the term "fixed charges," as herein used, shall include the principal of maturing obligations.

8. Advances from the fund shall be represented by obligations of the participating carrier to the Corporation, bearing interest at the then current rediscount rate of the Federal Reserve Bank in the New York District, the interest rate to be adjusted quarterly, on the first days of January, April, July and October of each year, to such rediscount rate as then exists. The interest shall be payable semiannually and the obligation shall fall due at such time as may be agreed upon between the applicant and the Corporation, not exceeding two years, having due regard to the accomplishment of the purpose of preventing default in the payment of fixed charges, but renewable for an additional period of not exceeding two years at the discretion of the Corporation.

No recipient of any loan made from the fund shall declare or pay any dividend until the loan has been fully repaid principal and interest, except in cases where, by contract or otherwise, the payment of a specific dividend as a fixed charge is involved, which would, if not paid, result in a default in respect thereto.

9. In making loans from the fund the Corporation shall take as security the best available collateral, including, if required by the Corporation, the pledge of the amounts due or to become due an applicant on distribution as provided in paragraph 14 and with discretion to the Corporation, in any case of important public interest, to relax the requirements of this paragraph.

10. The Corporation shall make monthly report to the Interstate Commerce Commission and to the contributing carriers of its receipts, loans and disbursements, together with a summary of its current financial condition.

11. The Corporation shall have the power and authority to require reports from the participating carriers, and shall have the right of access to and audit of their books and records for the purposes of this plan.

12. The Corporation shall render to the Interstate Commerce Commission such periodical reports as the Commission may request, and the Commission at all times shall have access to the books and records of the Corporation for inspection and audit.

13. Each railroad carrier making a separate operating report to the Interstate Commerce Commission, except those excluded from participation by paragraph 2 hereof, shall be under obligation to contribute to the fund and shall, subject to the provisions of paragraph 7, have the right to apply for and receive loans therefrom.

14. At least once in every six months the Board of Directors of the Corporation shall review its needs for funds to carry out and accomplish its purposes; and, if they shall at any time find that there is a balance in its hands over and above its requirements, such balance shall be distributed to the participating carriers in the proportion in which their respective earnings (not including interest paid in on delayed payments), less any amount repaid to them, respectively, as a refund for taxes, contributed to the fund, except that any distributable amount inuring to a carrier indebted to the fund, instead of being paid to it, shall be credited on its obligation.

15. The obligation imposed by this plan to make payments into the fund shall continue in effect until such payments shall have been made in respect to all traffic moved up to and including March 31, 1933, and the Corporation shall continue to function for such period thereafter as may be necessary to collect all outstanding loans, make distribution of the remaining funds to the participating carriers in the proportion above mentioned, and generally to wind up and settle its affairs.

16. This plan shall become effective only when those who have assented thereto all agree that a sufficient number have assented to make it practically operative.

An interesting debate as to the comparative merits of a loan or an outright distribution of the pooled rate increase, between two former members of the Interstate Commerce Commission has been conducted in the columns of the Wall Street Journal, of which Thomas F. Woodlock is contributing editor. On November 17 that paper published an editorial taking the position that after deciding that the rate increases it has proposed would be reasonable the commission has no legal power to attach conditions to the right of the carriers to collect the new rates. Former Commissioner Mark W. Potter, who first proposed the pool plan several years ago in the western general rate case, although at that time on a basis of enough to produce a return of 5¾ per cent, replied to this in a letter to the editor challenging the statement as "incorrect in its facts and its law." Citing the New England divisions case and the Dayton-Goose Creek case decisions of the Supreme Court as authority that "rates may or may not be reasonable according to the use which is to be made of the proceeds" he said that if the commission desires to make the pool effective it must avoid anything that would appear to recognize that the moneys are the property of the collecting carriers. If the condition is to be dispensed with, he said, it should be done by frank modification of the decision. Mr. Woodlock wrote a reply to this saying that the Dayton-Goose Creek case dealt with excess earnings, not with earnings producing admittedly less than a fair return, but he said that as a layman he would "humbly, but eagerly, await what the commission has to say."

Odds and Ends . . .

Demon Rum Takes Its Toll

The G. M. & N. News reports that that railway recently had a claim presented for a cow supposed to have been killed by a train. Investigation developed that the cow in question had helped herself to some "mash," had become intoxicated, and had died a quarter of a mile from the railroad track.

Banana Trees in Texas

A few weeks ago (in the issue of October 10) we told of the "petrified zoo," which is one of the most notable things about the Missouri-Kansas-Texas station at Hiattville, Kan. This is not the only Katy Station where the unusual is to be found. At the Highland Park station, Dallas, Tex., there is a small grove of banana trees. They are the especial pride of W. G. Crush, assistant to the executive vice-president of the Katy.

Slogan Contest Closes

The contest for a slogan to be used in connection with the advertising of the Norfolk & Western merchandise freight transportation has closed. A total of 2,289 suggestions were received by the committee of judges. More than 400 employees participated in the contest. Of these, 113 work in the motive power department and other departments were also well represented. Employees in the headquarters of the railway at Roanoke furnished the largest number of suggestions, as was expected. However, substantial numbers were received from other points both on and off the railroad, two suggestions coming from San Francisco, Cal.

Pennsylvania Helps the Blind

It was a "soulless" corporation that announced the other day that blind persons who are accustomed to rely upon trained dogs to direct their steps may be accompanied by such dogs on the trains of the corporation without extra charge. In making this humane announcement, the Pennsylvania railroad expressed its eagerness to extend every possible courtesy and aid to blind travelers. As in recent years, trained dogs have come into wide use as guides to such persons and are companions as well as assistants, the road felt that master and servant should not be separated. Only dogs for which traveling permits have been issued by the American Foundation for the Blind will be admitted to passenger accommodations and the Pennsylvania suggests that such dogs should not be teased or in any other way distracted from their duty. These are obviously reasonable conditions of a privilege, the granting of which indicates that some corporations at least are not without something closely resembling a heart.—Editorial in New York Evening Post.

Royal Situation Wanted

We are indebted to C. R. Shaw, assistant engineer, Lafayette division, Southern Pacific lines in Texas and Louisiana, for a copy of a letter written by a section foreman to his former employer, asking for re-employment. The letter was written in 1895, at the time when the Aransas Pass Railroad of Texas was in operation.

"O Emperor of the Aransas:

"Listen to the petition of one of thy servants. Dost thou need a king for one of thy small principalities? Hath none of their heads become sore from wearing the crown? And hath none of thy snipes become lazy for want of proper attention by the king? Hath none of thy rail joints become low? Hath none of thy levels become hillocks? Hath not the grass of the Johnson flourished in the 'rain'? Hath none of the scrub longhorned cows become muleys and Jerseys of high grade after crossing with a railroad engine?

"If you are suffering from any of these ails and ills generally or specifically on any section of any of your principalities, then crown me king, rest contented, eat plenty, sleep o' nights, and be happy.

"Your crownless servant,
JOE LYTEL."

Why Enginemen Turn Gray

Locomotive engineers, constantly on the alert to avoid loss of life and to prevent accidents, frequently have nerve-racking experiences. Illustrative of this is a report recently made to Superintendent E. E. Hanna by Engineer M. McComas. Although written in the usual routine manner it not only shows the burden and strain placed upon engineers by trespassers and others, but proves again that eternal vigilance is the price of safety. It follows:

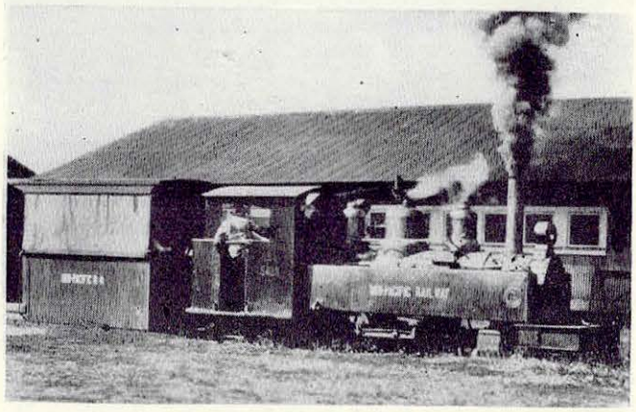
"As train No. 311 was entering the Trinity River bridge at Fort Worth, we noticed two boys trying to get across the bridge ahead of the train. One boy got down onto a cap and jumped off; the other continued to run and fell and it looked like we would strike him, I had slowed the train down to slow, safe speed, in order to prevent striking him, which otherwise would have been unavoidable.

"The following day as train No. 311, engine 364, was approaching the main highway crossing near milepost 233, an automobile backed onto the track just ahead of us. I made an emergency application of the air to keep from striking the automobile. The reduction in speed allowed the car just time enough to clear the crossing."—From the Missouri-Kansas-Texas Employees Magazine.

Fair Exchange

When an officer of the Mid-Pacific railroad of Hawaii visited California, he was entertained by an officer of the Southern Pacific, who presented him with a pass over the Southern Pacific lines, and who in turn received a pass over the Mid-Pacific railroad. Somewhat later the Southern Pacific officer went to the Hawaiian Islands where he boarded a Mid-Pacific train and presented his pass.

The pass was honored, of course, but the visitor was somewhat disconcerted to find that the Mid-Pacific system has three miles of line only. It is operated by the United States Army and the cars are named after the Hawaiian kings who used to reign over the islands.



Part of the Rolling Stock of the Three-Mile Mid-Pacific

3. Any carrier eligible to participate, except as limited by the next preceding paragraph, shall, upon execution of its written assent to this plan, become and be a participating carrier hereunder and obligated to make payments into the fund in the amounts and at the times hereinafter specified, and shall thereby confer upon the Corporation full power and authority to deal with, administer and apply the fund, so paid to it, to and for the purposes of the plan and to do and perform any and all other things necessary or appropriate to carry out and effectuate its purposes.

4. The amount to be paid into the fund, by each of the participating carriers, shall be the gross revenue received by it from the increase of rates scheduled by the Commission to be increased in the Appendix to its report in this proceeding; provided, however, that if any participating carrier is required to pay a tax or taxes because of the receipt by it of revenue from the proposed increase in rates, it shall, upon payment thereof, be entitled to withdraw from the Corporation, and the Corporation shall refund to it, the amount of such tax or taxes. In no case shall a participating carrier be required to pay into the fund any amount (except interest on delayed payments) not derived from the increase in rates made pursuant to the Commission's proposal.

5. The amount derived from the increase in rates shall, as nearly as possible, be ascertained and stated by each participating carrier within forty days after the month in which it accrues, and shall be paid to the Corporation within ten days after the expiration of the forty-day period, to constitute a fund for the purposes hereinafter specified. Similar payments into the fund shall thereafter be made monthly and if not paid when due, the amount thereof shall bear interest at the rate of eight per cent per annum. Monthly report of such payments shall be made by each participating carrier to the Interstate Commerce Commission.

6. The expense of administration incurred by the Corporation shall be paid out of the fund.

7. The Corporation shall use the fund so provided to carry out the Commission's purpose to prevent, so far as practicable, defaults by railroad companies in their fixed charges. To that end, and subject to the exceptions hereinafter stated, it shall, upon the application of any participating carrier, if the amount in the fund at the time is sufficient for the purpose, make to the applicant such loan or loans therefrom as are necessary to enable it to meet its fixed charges and to avoid default thereon; but no advance or loan from the fund shall be made for any other purpose and no advance or loan shall be made—

(a) To a carrier already in default or in receivership;

(b) To a carrier which derives less than fifty per cent of its revenues from freight transportation;

(c) To a carrier which is able to meet its fixed charges from its earnings, other income or other resources;

(d) To a carrier which, with the aid of the loan from the Corporation, would still be unable to meet its fixed charges or to avoid a default.

(e) To a carrier by water;

(f) To a carrier which has not complied in full with its obligations under paragraph 4 of this plan.

In determining the amount of the deficiencies in the earnings of an applicant and the necessity for making it a loan, the amount actually expended for maintenance (but not the amount charged to operating expenses on account of depreciation and retirements) in the period from July 1, 1930, to June 30, 1931, shall be used as the maximum of its maintenance charges, unless in the discretion of the Corporation a different period should in a special case be justified.

It is not intended that the term "fixed charges," as herein used, shall include the principal of maturing obligations.

8. Advances from the fund shall be represented by obligations of the participating carrier to the Corporation, bearing interest at the then current rediscount rate of the Federal Reserve Bank in the New York District, the interest rate to be adjusted quarterly, on the first days of January, April, July and October of each year, to such rediscount rate as then exists. The interest shall be payable semiannually and the obligation shall fall due at such time as may be agreed upon between the applicant and the Corporation, not exceeding two years, having due regard to the accomplishment of the purpose of preventing default in the payment of fixed charges, but renewable for an additional period of not exceeding two years at the discretion of the Corporation.

No recipient of any loan made from the fund shall declare or pay any dividend until the loan has been fully repaid principal and interest, except in cases where, by contract or otherwise, the payment of a specific dividend as a fixed charge is involved, which would, if not paid, result in a default in respect thereto.

9. In making loans from the fund the Corporation shall take as security the best available collateral, including, if required by the Corporation, the pledge of the amounts due or to become due an applicant on distribution as provided in paragraph 14 and with discretion to the Corporation, in any case of important public interest, to relax the requirements of this paragraph.

10. The Corporation shall make monthly report to the Interstate Commerce Commission and to the contributing carriers of its receipts, loans and disbursements, together with a summary of its current financial condition.

11. The Corporation shall have the power and authority to require reports from the participating carriers, and shall have the right of access to and audit of their books and records for the purposes of this plan.

12. The Corporation shall render to the Interstate Commerce Commission such periodical reports as the Commission may request, and the Commission at all times shall have access to the books and records of the Corporation for inspection and audit.

13. Each railroad carrier making a separate operating report to the Interstate Commerce Commission, except those excluded from participation by paragraph 2 hereof, shall be under obligation to contribute to the fund and shall, subject to the provisions of paragraph 7, have the right to apply for and receive loans therefrom.

14. At least once in every six months the Board of Directors of the Corporation shall review its needs for funds to carry out and accomplish its purposes; and, if they shall at any time find that there is a balance in its hands over and above its requirements, such balance shall be distributed to the participating carriers in the proportion in which their respective earnings (not including interest paid in on delayed payments), less any amount repaid to them, respectively, as a refund for taxes, contributed to the fund, except that any distributable amount inuring to a carrier indebted to the fund, instead of being paid to it, shall be credited on its obligation.

15. The obligation imposed by this plan to make payments into the fund shall continue in effect until such payments shall have been made in respect to all traffic moved up to and including March 31, 1933, and the Corporation shall continue to function for such period thereafter as may be necessary to collect all outstanding loans, make distribution of the remaining funds to the participating carriers in the proportion above mentioned, and generally to wind up and settle its affairs.

16. This plan shall become effective only when those who have assented thereto all agree that a sufficient number have assented to make it practically operative.

An interesting debate as to the comparative merits of a loan or an outright distribution of the pooled rate increase, between two former members of the Interstate Commerce Commission has been conducted in the columns of the Wall Street Journal, of which Thomas F. Woodlock is contributing editor. On November 17 that paper published an editorial taking the position that after deciding that the rate increases it has proposed would be reasonable the commission has no legal power to attach conditions to the right of the carriers to collect the new rates. Former Commissioner Mark W. Potter, who first proposed the pool plan several years ago in the western general rate case, although at that time on a basis of enough to produce a return of 5¾ per cent, replied to this in a letter to the editor challenging the statement as "incorrect in its facts and its law." Citing the New England divisions case and the Dayton-Goose Creek case decisions of the Supreme Court as authority that "rates may or may not be reasonable according to the use which is to be made of the proceeds" he said that if the commission desires to make the pool effective it must avoid anything that would appear to recognize that the moneys are the property of the collecting carriers. If the condition is to be dispensed with, he said, it should be done by frank modification of the decision. Mr. Woodlock wrote a reply to this saying that the Dayton-Goose Creek case dealt with excess earnings, not with earnings producing admittedly less than a fair return, but he said that as a layman he would "humbly, but eagerly, await what the commission has to say."

Fares good in Tourist Sleepers

$65
TO CHICAGO
ST. LOUIS $60
NEW ORLEANS . . 60
DENVER 39

These one-way tickets are good in Tourist Sleepers which have comfortable berths, wash rooms, porter service, etc. Tourist Berths cost much less than Standard Pullmans.

COACH FARES
$15 TO Portland
ROUNDTRIP $28
Train comfort at the lowest possible cost. Good in coaches or reclining chair cars, with tourist sleeper privileges. Tourist berths cost about ½ as much as Standard Pullmans.

$13 TO Los Angeles
Good on all trains carrying coaches except the "T..."

LOW FARES EAST

Railroad tickets have personalities, just as human beings have. And when you buy your ticket, you should make sure that its personality agrees with yours.

Some tickets take you East and back over the same line, showing you the same type of country both ways. And while that country may be beautiful enough, the trip will lack variety.

We've always felt it's wiser, and much more fun to *go one way and return another.* And this you can do on Southern Pacific's 4 Great Routes. Each traverses a region whose scenic charm differs widely from the others. *And when you go East on one route, return on another, you see more of the United States than on any other railroad.*

A FEW EXAMPLES OF SUMMER ROUNDTRIPS
On sale daily until October 15. Tickets good until October 31.

NEW YORK CITY	$151.30
CHICAGO	90.30
Atlanta	113.60
Baltimore	143.86
Boston	157.56
Cleveland	114.82
Philadelphia	149.32
Denver	67.20
Detroit	109.92
Houston	73.60
Kansas City	73.60
St. Louis	85.60
Minneapolis	91.90
Portland	168.72
New Orleans	89.60
Pittsburgh	124.06
Washington, D.C.	147.86

Through Northwest, slightly more.

EVERY DAY
$3.60
Roundtrip to
Sacramento
Return limit—10 days
Our daily fleet of trains offers the most frequent service to Sacramento.

EVERY SUNDAY
$2
Roundtrip to
Santa Cruz
Ride the fast "Santa Cruz Special," leaving 3rd and Townsend every Sunday at 8:02 a.m.; arriving back at 8:55 p.m.
On week days, $3 roundtrip. Good for 2 days.

Lowest Coach Fares in Rail History!

$40
TO CHICAGO
*NEW YORK . . $70.70
KANSAS CITY . 32.50
ST. LOUIS . . . 36.50
NEW ORLEANS . 36.50
and many more.

Good only in coaches or reclining chair cars. Train comfort at the lowest possible cost.

We provide the *Fastest* service to Chicago, St. Louis and

...ern Pacific

LAST TIME THIS SUMMER
Southern Pacific DOLLAR DAYS!
$1 FOR EACH 100 MILES

Last Dollar Day sale this summer. This time your choice of three days to leave and a much longer return limit than ever before . . . June 8! This gives you as many as twelve days for a trip over the Decoration Day holiday.

Roundtrips between all places on our Pacific Lines *slashed* to approximately 1c a mile.

GOOD ON ALL TRAINS LEAVING THURSDAY, FRIDAY & SATURDAY

May 28,29,30

BE BACK BY MIDNIGHT JUNE 8
PLENTY OF TIME FOR LONG TRIPS!

AN EXAMPLE:-
$10.25 ROUNDTRIP LOS ANGELES
(REGULAR ROUNDTRIP $22.75)

OTHER EXAMPLES OF ROUNDTRIPS:

PORTLAND (REGULAR ROUNDTRIP)	$16.20 ($36.00)	SACRAMENTO (REGULAR ROUNDTRIP)	$1.95 ($3.60)
PHOENIX (REGULAR ROUNDTRIP)	$17.15 ($31.45)	STOCKTON (REGULAR ROUNDTRIP)	$1.85 ($3.40)
MONTEREY (REGULAR ROUNDTRIP)	$2.70 ($6.00)	LAKE TAHOE (REGULAR ROUNDTRIP)	$5.90 ($13.25)
*RENO (REGULAR ROUNDTRIP)	$5.30 ($11.75)	SALT LAKE CITY (REGULAR ROUNDTRIP)	$16.85 ($40.00)

*Ask about special morning trains on May 28, 29, 30.

Southern Pacific

For further particulars phone DAvenport 4000 and ask for "Service Bureau." In Oakland, call LAkeside 2121, "Information Bureau."

Introducing the 7 day roundtrip
2c a mile

EXAMPLE

$3.60
Sacramento
and back
ON SALE EVERY DAY

Effective March 8, Southern Pacific will establish new "7 day" roundtrip fares to and from Suisun, Fairfield, Sacramento, Marysville, Chico, Colusa, Livermore, Stockton, and many others.

These
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where.

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Marysv
Chico

Soutl
Pho

In comfort like this . . .

$13 to Los Angeles
ROUNDTRIP $18
RETURN LIMIT 7 DAYS
Good in comfortable coaches on the "Coaster," "Tehachapi," "Shore Line," "San Joaquin," and in tourist sleepers on the "Coaster." Saves you many dollars.

$15 to Portland
Good on the "West Coast," "Shasta," "Klamath" and "Oregonian." In coaches or reclining chair cars. If you wish the additional comfort of a tourist lower berth, the cost is only $4.50 more. Fifty pounds of baggage checked free on these tickets.

ROUNDTRIP $28
RETURN LIMIT 16 DAYS

Southern Pacific
DAvenport 4000
LAkeside 2121

Southern Pacific DOLLAR DAYS!

GOOD ON ALL TRAINS LEAVING THURSDAY, FRIDAY OR SATURDAY
Sept. 3,4,5
BE BACK BY MIDNIGHT SEPTEMBER 14

$10.25 ROUNDTRIP TO LOS ANGELES
$16.20 ROUNDTRIP TO PORTLAND
$2.70 ROUNDTRIP TO MONTEREY
$1.85 ROUNDTRIP TO STOCKTON
$5.30 ROUNDTRIP TO RENO
$1.95 ROUNDTRIP TO SACRAMENTO
$5.90 ROUNDTRIP TO LAKE TAHOE
$16.85 ROUNDTRIP TO SALT LAKE
$20.25 ROUNDTRIP TO SEATTLE
$1.70 ROUNDTRIP TO SANTA CRUZ
$4.25 ROUNDTRIP TO FRESNO
$17.15 ROUNDTRIP TO PHOENIX
$8 ROUNDTRIP TO SANTA BARBARA

AND HUNDREDS OF OTHERS GOOD ON ALL TRAINS IN COACHES OR IN PULLMANS (PLUS BERTH CHARGE)

These are the leaders in our great "Dollar Day" sale for the Labor Day holidays. Remember that Monday, Sept. 7, is Labor Day; Wednesday, Sept. 9, is Admission Day.

For any other fares or information, phone DAvenport 4000, and ask for "Service Bureau."

Examples of Southern Pacific Newspaper Advertisements, Including the Distinctive "Department Store" Type of Display, Shown at the Top

NEWS

Western Lines Seek Class Rate Review

Petition asks reconsideration of long-haul class rates, in view of changed conditions

The western trunk lines have petitioned the Interstate Commerce Commission for a re-opening, rehearing and modification of its order in the western trunk line class rate case, in which it prescribed a revision, to become effective on December 3, estimated to allow the roads an increase in revenues of $10,000,000 to $12,000,00 a year. The railroads say, however, that they are unable to concur in this estimate, because the commission allowed increases in the short-haul rates as to which truck competition is increasing and ordered reductions in the long-haul rates. They ask particularly a reconsideration of the interterritorial and long-haul intraterritorial rates, pointing out that the record in this case was closed in the Spring of 1928 and that financial returns for 1929 were stipulated into the record for consideration, whereas conditions have changed materially since that time. "Petitioners therefore are under the requirement of establishing," they say, "during the critical conditions of 1931, reduced rates which had their inception two or three years ago when these carriers were in a less precarious condition than that of to-day. If the commission by reason of the improvement in earnings in 1928-1929 made its relief meager with the expectation of continued improvement, any such expectation has been proved groundless. The commission apparently is stressing the advances it has authorized within the territory for short hauls without allowing either for the inroads on traffic by the trucks or giving sufficient consideration to the drastic reductions required in practically all interterritorial rates and long-haul intraterritorial rates."

C. P. R. Re-opens Shops

Eight thousand railway workers in six provinces in Canada returned to work on Tuesday, when the Canadian Pacific re-opened its principal shops which were closed in September as a measure of economy.

In Angus Shops, Montreal, 4,500 will return to work, while the remaining 3,500 workers will be distributed over the following shops; McAdam Junction, N. B., Carleton Place, Ont., West Toronto, Ont., North Bay, Ont., Weston Shops, Winnipeg; Ogden Shops, Calgary, and Vancouver shops.

Public Ownership by Default of Public Regulation

It is the nature of bureaucracy to be suspicious, jealous of its power and cautious in its actions. .... Ever in its mouth is the comfortable phrase, "the public interest." It deals in minima when it is question of the rights of "regulatees"; it deals in maxima when it is a case of requirements; doubts must be rigidly resolved in the "public" favor; the "regulatee" is always wrong unless he can prove to the hilt that he is right..... This means an inevitable undernourishment of the "regulatee" and development of a more or less chronic anemia, which gradually undermines its vitality..... There is little doubt in this writer's mind that, to select one notable "regulatee," the railroad industry, we are drifting toward government ownership..... Granted that the drift is not rapid, that it is more glacier-like in its progress than the drift of a stream, it is nevertheless perceptible..... This writer doubts that if "the people" understood the facts they would view the matter as does "officialdom," but the danger is that the facts will be understood by "the people" only after the damage is done. Public ownership by deliberate choice is one thing and public ownership by default of public regulation is quite another, and it is the latter which threatens.

—Thomas F. Woodlock in the Wall Street Journal.

U. S. and Canada Discuss St. Lawrence Waterway

An exchange of views with respect to the Great Lakes-St. Lawrence deep waterway project took place on November 14 at Washington between the Secretary of State, H. L. Stimson, and W. D. Herridge, Canadian minister to the United States. This conference, the State Department announced, marks the initiation of discussions forecast in an earlier announcement, and was of a general nature, confined to the more important phases of the problem facing the two governments. Arrangements were made for the immediate reconvening of the joint engineering board with a view to an agreement upon the general form of development to be taken in the international section of the river, as to which some divergence of views existed in the 1926 report of the board.

New Waterway Protest Sent to the President

Nebraska chambers of commerce reiterate objections voiced last December

That businessmen have awakened to the seriousness of the huge expenditures for waterways and the ill effects of their development on railways and the public, is indicated in a telegram signed by six chambers of commerce in Nebraska and sent to President Hoover, with a copy to Secretary of War Patrick J. Hurley, and by a letter from S. W. Sinsheimer, president of the American Beet Sugar Company to the U. S. Department of Commerce. The telegram is as follows:

"Adverting to our telegram to you of December 5, 1930, and your reference of the same to Secretary Hurley, which prompt attention on your part was duly appreciated, the undersigned desire to reiterate the protest against huge and wasteful expenditures on navigation above Kansas City, particularly in view of the fact that developments since that time have even more emphatically demonstrated the justification of that protest. Railroads in the interior have not only reduced man forces, and with the consent of the state railway commission have abandoned many trains in Nebraska, but have also been forced to ask for increases in the traffic that is left. It is respectfully submitted that with seven railroad lines crossing the State of Iowa, west to east, reaching the barge system on the Mississippi, potential loadings from interior Nebraska and west could not be stopped at Sioux City or Omaha. Those loadings would in 18 hr. to 24 hr. be carried by rails to the Mississippi barges, whereas it would require about 6 to 8 days for their barge transportation from Sioux City to St. Louis moving via the Missouri River barge route. Near Rulo, halfway between Omaha and Kansas City, the Missouri was waded during the past summer from bank to bank, the water never going over the wader's knees. A test cargo of sugar, made since our former protest, required 42 days from New Orleans, barge to St. Louis and rail to interior Nebraska, obviously incompatible with present-day distribution standards. Again we appeal to you to aid the transportation system upon which we, of interior Nebraska cities, must rely and at the same time to further the use of the waters of Nebraska's rivers for irrigation."

Mr. Sincheimer's letter, in part, follows:

(Continued on page 800)

Operating Statistics of Large Steam Railways—Selected Items for the Month of September, 1931,

Region, road and year	Average miles of road operated	Train-miles	Locomotive-miles: Principal and helper	Locomotive-miles: Light	Car-miles: Loaded (thousands)	Car-miles: Per cent loaded	Ton-miles (thousands): Gross. Excluding locomotives and tenders	Ton-miles (thousands): Net. Revenue and non-revenue	Average number of locomotives on line: Serviceable	Unserviceable	Per cent unserviceable	Stored
New England Region:												
Boston & Albany.....1931	402	132,960	139,162	9,550	3,672	67.1	189,100	63,087	75	57	43.5	21
1930	407	139,453	148,905	14,891	4,120	67.1	214,481	77,750	88	43	33.0	28
Boston & Maine.....1931	2,066	295,564	333,720	31,318	9,874	69.5	505,699	186,285	174	112	39.2	29
1930	2,066	342,304	388,555	53,446	11,575	69.9	601,781	230,388	249	47	15.9	65
N. Y., New H. & Hart...1931	2,042	400,210	467,351	23,778	12,632	65.5	674,007	253,301	242	102	29.7	17
1930	2,093	394,959	462,563	30,433	13,977	64.6	765,780	299,215	272	69	20.3	48
Great Lakes Region:												
Delaware & Hudson.....1931	852	241,275	309,673	35,102	7,634	61.3	475,809	216,687	241	29	10.7	127
1930	875	290,133	384,352	40,537	8,846	62.4	579,339	273,869	236	35	12.8	103
Del., Lack. & Western....1931	998	372,393	410,375	46,091	12,145	66.8	678,361	266,528	212	60	22.0	34
1930	998	414,628	455,311	52,925	14,189	66.5	803,108	322,602	226	56	19.8	38
Erie (inc. Chi. & Erie)....1931	2,316	703,991	733,057	56,559	30,245	60.6	1,853,385	663,884	376	112	23.1	107
1930	2,316	805,591	866,807	62,618	35,914	60.9	2,207,755	839,574	396	97	19.6	92
Grand Trunk Western.....1931	1,021	208,794	209,984	969	4,848	60.3	286,146	98,682	110	40	26.8	37
1930	1,020	225,718	228,659	3,959	6,183	63.7	353,874	128,718	117	33	22.1	43
Lehigh Valley 1931	1,343	394,718	415,850	38,082	11,595	63.2	702,250	283,262	218	149	40.6	39
1930	1,343	447,322	478,734	45,713	14,484	64.6	874,463	370,812	251	94	27.1	39
Michigan Central 1931	1,869	364,804	365,098	8,460	11,082	58.3	654,619	212,642	146	70	32.3	57
1930	1,865	431,075	433,271	13,878	14,054	59.0	845,619	299,298	159	55	25.7	42
New York Central.....1931	6,477	1,607,683	1,722,740	102,544	59,008	60.4	3,646,000	1,467,557	843	529	38.6	242
1930	6,468	1,730,302	1,886,164	123,445	67,245	60.5	4,175,450	1,723,110	1,024	326	24.1	386
New York, Chi. & St. L...1931	1,660	449,397	454,097	1,352	14,117	60.6	824,574	291,445	173	66	27.7	59
1930	1,660	551,855	561,226	7,817	17,778	60.6	1,047,142	381,760	205	59	22.4	49
Pere Marquette 1931	2,200	301,376	308,229	2,734	6,875	59.9	430,914	172,008	149	30	16.5	43
1930	2,201	388,683	392,646	3,386	9,734	60.0	606,418	237,283	172	20	10.4	34
Pitts. & Lake Erie.....1931	235	68,085	70,010	641	2,572	58.0	211,841	117,329	55	24	30.6	29
1930	232	94,529	95,457	1,221	3,729	58.6	291,089	163,058	60	12	16.3	31
Wabash 1931	2,497	568,412	600,574	10,516	17,827	63.2	1,031,138	356,523	255	160	38.6	58
1930	2,497	672,906	723,533	12,371	21,340	64.4	1,234,609	454,851	300	92	23.5	54
Central Eastern Region:												
Baltimore & Ohio.....1931	5,536	1,305,304	1,489,294	159,772	40,281	59.7	2,706,040	1,175,762	875	305	25.8	246
1930	5,541	1,542,012	1,804,649	215,387	50,977	60.5	3,456,112	1,557,198	922	255	21.7	195
Big Four Lines.....1931	2,707	589,605	609,333	15,985	17,864	60.5	1,135,056	500,006	267	169	38.7	52
1930	2,712	702,948	733,663	21,841	22,388	60.6	1,468,458	675,583	305	162	34.7	24
Central of New Jersey.....1931	692	170,895	189,090	33,291	5,138	55.2	351,234	150,794	126	53	29.6	46
1930	692	226,231	247,441	39,201	6,596	56.3	451,215	202,228	154	34	18.0	22
Chicago & Eastern Ill.....1931	939	168,312	168,497	2,602	3,965	62.8	241,842	99,372	85	72	46.0	36
1930	946	196,400	197,916	2,807	5,336	65.4	319,371	138,568	94	53	36.3	35
Elgin, Joliet & Eastern....1931	447	79,630	81,855	2,243	1,869	58.2	148,012	73,158	81	10	10.7	27
1930	453	116,781	122,445	5,517	3,209	62.0	245,836	126,808	80	13	13.8	13
Long Island 1931	400	45,063	46,928	15,529	526	51.6	38,330	13,435	42	5	10.2	4
1930	400	48,863	53,332	12,241	690	53.6	48,925	17,730	43	8	15.9	..
Pennsylvania System.....1931	10,628	2,925,141	3,255,554	316,188	101,303	62.8	6,611,400	2,908,219	2,264	276	10.9	922
1930	10,675	3,385,516	3,809,700	385,164	124,092	62.9	8,225,619	3,706,498	2,384	294	11.0	787
Reading 1931	1,450	461,315	499,285	49,544	12,796	57.5	942,981	436,153	317	86	21.4	87
1930	1,448	542,306	590,966	52,922	15,059	57.8	1,080,533	516,888	312	68	18.0	52
Pocahontas Region:												
Chesapeake & Ohio.....1931	3,110	958,574	1,008,822	35,079	38,132	54.8	3,265,297	1,760,416	632	68	9.8	272
1930	3,112	1,126,979	1,201,078	51,244	41,962	54.4	3,535,887	1,879,758	551	106	16.2	108
Norfolk & Western.....1931	2,272	641,122	693,723	29,775	23,804	58.0	1,963,081	1,020,429	455	35	7.2	154
1930	2,230	770,095	851,454	41,799	28,940	57.0	2,475,227	1,291,931	462	40	8.0	132
Southern Region:												
Atlantic Coast Line.....1931	5,154	473,658	475,536	7,247	9,724	63.2	524,296	187,294	383	87	18.6	124
1930	5,160	543,235	545,246	8,139	12,897	62.5	713,121	264,100	390	60	13.4	125
Central of Georgia.....1931	1,900	212,045	212,637	3,902	4,858	66.4	266,808	101,260	107	42	28.1	4
1930	1,900	223,694	224,702	3,366	5,764	67.9	311,554	123,215	123	39	19.3	7
Ill. Cent. (inc. Y. & M. V.)1931	6,670	1,404,971	1,416,907	23,817	33,276	58.3	2,258,965	874,013	707	180	20.3	72
1930	6,695	1,586,226	1,602,408	28,852	42,842	60.0	2,853,252	1,157,671	708	145	17.0	69
Louisville & Nashville.....1931	5,263	1,068,832	1,137,136	29,147	22,674	57.5	1,596,130	745,472	521	183	25.9	136
1930	5,252	1,367,714	1,445,822	39,432	29,118	56.9	2,074,156	972,946	582	130	18.3	128
Seaboard Air Line.....1931	4,466	420,826	425,671	5,549	9,875	62.6	558,323	205,289	259	29	10.1	62
1930	4,479	468,652	485,286	4,936	11,455	62.0	670,488	257,628	276	28	9.2	38
Southern 1931	6,675	1,106,803	1,121,665	19,665	26,166	64.4	1,442,919	543,538	791	181	18.6	229
1930	6,676	1,253,030	1,276,289	22,044	30,244	65.2	1,686,907	660,239	820	160	16.3	239
Northwestern Region:												
Chi. & North Western.....1931	8,459	1,122,594	1,169,721	25,449	27,753	60.1	1,692,779	612,275	675	125	15.6	152
1930	8,459	1,362,930	1,429,099	25,619	35,471	58.7	2,254,223	832,202	756	99	11.6	107
Chi. Gt. Western.....1931	1,459	238,003	238,017	16,841	7,459	57.8	465,781	170,020	78	39	33.0	5
1930	1,459	279,721	299,905	26,573	9,251	61.9	548,657	208,534	100	12	10.9	7
Chi., Milw., St. P. & Pac..1931	11,290	1,352,784	1,436,934	66,722	35,536	58.8	2,266,444	884,482	771	142	15.5	327
1930	11,313	1,560,555	1,668,134	91,977	45,577	60.3	2,871,364	1,174,203	824	120	12.7	255
Chi., St. P., Minn. & Om..1931	1,714	231,848	254,254	10,520	4,778	62.7	283,520	112,078	153	23	13.1	68
1930	1,714	288,649	317,008	13,757	6,266	66.1	357,059	148,097	151	23	13.3	38
Great Northern 1931	8,319	729,406	738,384	22,783	24,499	57.6	1,634,770	674,697	491	142	22.4	119
1930	8,338	921,274	932,568	34,718	35,708	61.3	2,366,607	1,099,234	486	149	23.4	69
Minn., St. P. & S. St. M...1931	4,323	355,543	361,855	4,562	8,415	64.6	478,982	200,752	156	55	26.0	21
1930	4,351	462,860	475,441	5,680	13,815	65.4	807,834	374,646	179	41	18.7	17
Northern Pacific 1931	6,458	638,742	676,021	40,247	19,139	66.5	1,073,598	417,720	390	125	24.2	69
1930	6,474	767,825	821,938	53,718	25,673	66.6	1,502,304	639,317	406	110	21.3	36
Oreg.-Wash. R. R. & Nav..1931	2,218	172,552	180,149	11,616	4,735	68.8	277,609	118,386	116	15	11.2	48
1930	2,226	205,590	219,878	15,373	5,956	68.8	353,666	154,038	120	22	15.5	28
Central Western Region:												
Alton 1931	1,000	216,242	227,520	2,542	4,812	58.4	308,558	116,229	102	30	22.6	20
1930	1,000	270,853	285,486	1,820	6,423	61.5	401,974	156,368	124	22	14.9	23
Atch., Top. & S. Fe (incl. 1931	11,546	1,531,623	1,645,267	76,368	45,465	61.6	2,842,688	964,835	735	206	21.9	215
P. & S. F.).....1930	11,263	1,769,046	1,922,247	99,922	58,185	62.2	3,561,905	1,199,646	799	161	16.8	206
Chi., Burl. & Quincy.....1931	9,257	1,129,971	1,170,452	32,959	32,503	58.8	1,939,639	811,171	589	104	15.1	69
1930	9,275	1,360,522	1,418,998	58,108	43,286	59.0	2,639,227	1,145,831	630	146	18.8	29
Chi., Rock I. & Pacific....1931	7,621	976,563	996,565	6,248	23,467	61.8	1,446,374	575,046	505	131	20.6	128
1930	7,593	1,175,353	1,210,104	9,989	30,692	61.8	1,883,242	757,006	539	135	20.0	135
Denver & R. G. Wn.....1931	2,557	290,507	317,167	32,877	8,120	59.2	503,865	176,307	225	18	7.4	53
1930	2,524	351,293	396,091	50,536	9,267	55.9	611,202	213,378	235	9	3.9	28
Los Angeles & Salt Lake..1931	1,241	167,029	181,092	17,282	4,968	67.0	278,886	100,415	100	14	12.5	31
1930	1,220	176,779	194,642	23,320	5,261	61.9	321,424	121,132	114	5	4.3	40
Oregon Short Line.....1931	2,532	318,199	332,668	22,959	9,594	60.7	591,545	211,839	172	7	3.8	58
1930	2,539	364,769	384,765	31,778	11,452	59.5	741,767	278,283	169	8	4.7	41
So. Pacific—Pacific Lines..1931	8,940	1,163,145	1,257,909	140,949	36,331	60.2	2,305,679	766,787	658	271	29.2	210
1930	8,979	1,488,249	1,617,000	199,142	48,078	60.0	3,071,999	1,029,702	737	212	22.4	155
Union Pacific 1931	3,768	1,022,413	1,045,566	42,350	38,680	59.1	2,342,807	721,394	415	39	8.7	149
1930	3,765	1,393,950	1,426,782	62,896	50,587	57.9	3,181,350	972,805	433	39	8.3	82
Southwestern Region:												
Gulf, Colo. & S. Fe.....1931	1,965	186,405	189,885	3,633	4,847	68.8	281,892	117,075	98	26	20.6	24
1930	1,965	216,489	227,879	6,260	7,401	61.6	461,881	184,639	104	16	13.5	21
Mo.-Kans.-Texas Lines.....1931	3,282	336,822	339,682	4,964	9,560	59.9	575,627	214,074	170	58	25.4	84
1930	3,176	384,761	390,896	7,369	12,610	59.9	755,496	294,304	158	75	32.2	55
Missouri Pacific 1931	7,408	1,139,806	1,167,690	30,305	30,495	60.4	1,922,595	725,035	510	79	13.4	186
1930	7,423	1,404,237	1,453,358	39,550	40,906	59.3	2,648,782	1,032,449	549	87	13.6	156
St. Louis-San Francisco....1931	5,175	642,905	648,510	7,347	14,785	59.9	911,476	349,770	388	84	17.8	110
1930	5,169	715,476	727,168	7,430	18,135	59.6	1,119,420	434,102	383	80	17.3	44
St. Louis Southwestern 1931	1,902	172,478	173,096	2,468	4,040	62.9	231,445	83,572	111	30	21.1	39
Lines 1930	1,871	212,316	215,852	2,626	5,945	63.1	348,129	132,058	94	27	22.2	14
Texas & New Orleans.....1931	4,687	476,612	477,558	1,035	10,712	61.1	663,431	252,346	221	107	32.7	44
1930	4,680	610,963	612,890	1,553	15,434	61.3	947,424	365,850	273	50	15.5	64
Texas & Pacific.....1931	1,946	256,161	256,161	1,604	6,682	64.0	397,469	145,593	191	57	22.9	51
1930	1,951	343,935	343,935	3,923	9,930	58.6	628,650	235,412	201	43	17.8	44

Compiled by Bureau of Statistics, Interstate Commerce Commission. Subject to revision.

How The Southern Pacific Advertises

The purposes and nature of the national and local campaigns which have resulted in better than average business

By F. Q. Tredway

General Advertising Manager, Southern Pacific

FOR the second successive year, the Southern Pacific has won the first prize for the best Pacific Coast transportation advertising, the award being made in the annual advertising competition in connection with the convention of the Pacific Advertising Club's Association. The theme of the convention this year was the demonstration of how various businesses had operated to meet and overcome the depression, using advertising as one of their basic weapons. The advertising competition tied in with that principle, and the various exhibits showed how different advertisers had used advertising to hold and gain business.

The Southern Pacific has paid a great deal of attention to its advertising in late years, this being one factor in the general campaign the company has carried on to hold declining passenger revenues. This company was early affected by automobile competition, the Pacific Coast, with an all-year driving climate, early establishing a system of fine highways. From 1921 to 1926, the Southern Pacific lost passenger business faster than the average of the Class I roads, but after 1926 the rate of decrease was curtailed, until in 1929, the Southern Pacific was one of the very few roads in the country to show an increase. Although decreases have been heavy in 1931, the Southern Pacific's showing is one of the best in the country as to percentage of decrease.

The Southern Pacific's exhibit which received honors comprised samples of its national magazine campaign aimed especially at transcontinental business, and of its local newspaper advertising, this year devoted mainly to backing up various low-fare offerings. Examples of booklets and the supplementary posters, counter cards, dodgers, etc., were also presented.

Concentrate on One Theme

In its national campaign, the Southern Pacific has been pounding home a very definite theme, that of the "Four Great Routes—Go One Way, Return Another." Large space has been taken in the magazines, and a continuity of style, theme and general treatment has been maintained. The Southern Pacific has felt that it has a good selling idea and has stuck to it. The advertising ties in, of course, with the various well-known Pacific Coast attractions, but more and more the advertising is selling its train service. The ads are personalized in many cases, adding interest, and attractive art work commands the attention of the reader. The supplementary illustration of a pictorial ticket has run through most of the ads, this idea being used in one main ad

531 FIFTH AVENUE SOUTHERN PACIFIC
531 Fifth Ave. to Hangtown, Calif.
Southern Pacific
4 GREAT ROUTES FOR TRANSCONTINENTAL TRAVEL
"If tickets were illustrated what stories they would tell"
Southern Pacific
33 WEST JACKSON BLVD
These miners don't wear red shirts...
Southern Pacific
4 GREAT ROUTES FOR TRANSCONTINENTAL TRAVEL

Typical Southern Pacific Magazine Advertisements

Odds and Ends . . .

Demon Rum Takes Its Toll

The G. M. & N. News reports that that railway recently had a claim presented for a cow supposed to have been killed by a train. Investigation developed that the cow in question had helped herself to some "mash," had become intoxicated, and had died a quarter of a mile from the railroad track.

Banana Trees in Texas

A few weeks ago (in the issue of October 10) we told of the "petrified zoo," which is one of the most notable things about the Missouri-Kansas-Texas station at Hiattville, Kan. This is not the only Katy Station where the unusual is to be found. At the Highland Park station, Dallas, Tex., there is a small grove of banana trees. They are the especial pride of W. G. Crush, assistant to the executive vice-president of the Katy.

Slogan Contest Closes

The contest for a slogan to be used in connection with the advertising of the Norfolk & Western merchandise freight transportation has closed. A total of 2,289 suggestions were received by the committee of judges. More than 400 employees participated in the contest. Of these, 113 work in the motive power department and other departments were also well represented. Employees in the headquarters of the railway at Roanoke furnished the largest number of suggestions, as was expected. However, substantial numbers were received from other points both on and off the railroad, two suggestions coming from San Francisco, Cal.

Pennsylvania Helps the Blind

It was a "soulless" corporation that announced the other day that blind persons who are accustomed to rely upon trained dogs to direct their steps may be accompanied by such dogs on the trains of the corporation without extra charge. In making this humane announcement, the Pennsylvania railroad expressed its eagerness to extend every possible courtesy and aid to blind travelers. As in recent years, trained dogs have come into wide use as guides to such persons and are companions as well as assistants, the road felt that master and servant should not be separated. Only dogs for which traveling permits have been issued by the American Foundation for the Blind will be admitted to passenger accommodations and the Pennsylvania suggests that such dogs should not be teased or in any other way distracted from their duty. These are obviously reasonable conditions of a privilege, the granting of which indicates that some corporations at least are not without something closely resembling a heart.—Editorial in New York Evening Post.

Royal Situation Wanted

We are indebted to C. R. Shaw, assistant engineer, Lafayette division, Southern Pacific lines in Texas and Louisiana, for a copy of a letter written by a section foreman to his former employer, asking for re-employment. The letter was written in 1895, at the time when the Aransas Pass Railroad of Texas was in operation.

"O Emperor of the Aransas:

"Listen to the petition of one of thy servants. Dost thou need a king for one of thy small principalities? Hath none of their heads become sore from wearing the crown? And hath none of thy snipes become lazy for want of proper attention by the king? Hath none of thy rail joints become low? Hath none of thy levels become hillocks? Hath not the grass of the Johnson flourished in the 'rain'? Hath none of the scrub longhorned cows become muleys and Jerseys of high grade after crossing with a railroad engine?

"If you are suffering from any of these ails and ills generally or specifically on any section of any of your principalities, then crown me king, rest contented, eat plenty, sleep o' nights, and be happy.

"Your crownless servant,
JOE LYTEL."

Why Enginemen Turn Gray

Locomotive engineers, constantly on the alert to avoid loss of life and to prevent accidents, frequently have nerve-racking experiences. Illustrative of this is a report recently made to Superintendent E. E. Hanna by Engineer M. McComas. Although written in the usual routine manner it not only shows the burden and strain placed upon engineers by trespassers and others, but proves again that eternal vigilance is the price of safety. It follows:

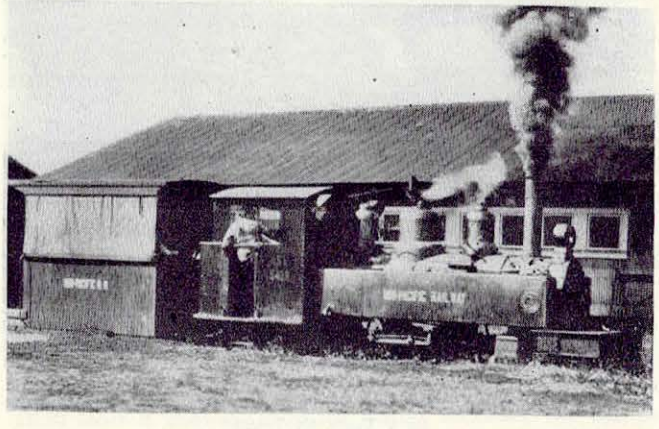
"As train No. 311 was entering the Trinity River bridge at Fort Worth, we noticed two boys trying to get across the bridge ahead of the train. One boy got down onto a cap and jumped off; the other continued to run and fell and it looked like we would strike him, I had slowed the train down to slow, safe speed, in order to prevent striking him, which otherwise would have been unavoidable.

"The following day as train No. 311, engine 364, was approaching the main highway crossing near milepost 233, an automobile backed onto the track just ahead of us. I made an emergency application of the air to keep from striking the automobile. The reduction in speed allowed the car just time enough to clear the crossing."—From the Missouri-Kansas-Texas Employees Magazine.

Fair Exchange

When an officer of the Mid-Pacific railroad of Hawaii visited California, he was entertained by an officer of the Southern Pacific, who presented him with a pass over the Southern Pacific lines, and who in turn received a pass over the Mid-Pacific railroad. Somewhat later the Southern Pacific officer went to the Hawaiian Islands where he boarded a Mid-Pacific train and presented his pass.

The pass was honored, of course, but the visitor was somewhat disconcerted to find that the Mid-Pacific system has three miles of line only. It is operated by the United States Army and the cars are named after the Hawaiian kings who used to reign over the islands.



Part of the Rolling Stock of the Three-Mile Mid-Pacific

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Typical Southern Pacific Magazine Advertisements

which attracted considerable attention, and which was headed "If Tickets Were Illustrated, What Stories They Would Tell."

In the Southern Pacific's local advertising, as in the national campaign, a strong effort has been made to maintain a continuity of style. The ads are well designed and attractive, and with the constant use of the same styles of type treatment and layout, it is easy for the public to recognize a Southern Pacific ad at a glance. The company has also striven to make the ads very definite and informative, but at the same time to put real salesmanship also into the advertising.

"Dollar Days"

One of the phases of the local campaign which attracted the greatest interest from Pacific Coast advertisers was the company's "Dollar Day" campaigns, which were inaugurated last February and which immediately drew widespread attention. Under the direction of F. S. McGinnis, vice president, and E. W. Clapp, general passenger traffic manager, round-trip fares of 60 per cent of the one-way fare were put into effect on a number of occasions. It was recognized that substantial advertising backing would have to be given these fares. We sought to present them in some way which would attract more than ordinary attention, and hunted for some sort of a label to be put on the "package" when it was wrapped up and ready for delivery to the public. It was recognized that the Dollar Day sales held by various stores were popular and were recognized as real bargains by the public, and so it was decided to apply this idea to the excursion fares, with the belief that on account of a Dollar Day being new in the railroad business, it would have novelty and attract attention, and at the same time would have the advantage of being well understood by the public.

Large newspaper space was used, as well as a great variety of supplemental media, such as radio, posters, dodgers, counter cards, street car fronts, car cards, etc. Large posters were made (28 in. by 40 in.), carrying the main Dollar Day message, with blank spaces left for the local agents to letter in the fares at their respective points. These large posters were tacked on the outside of stations and around town. Dignity was sacrificed and in a number of cases ticket office windows were painted over and the Dollar Day message blazoned forth in the manner of fire sale or "going out of business" advertising of small clothing dealers. Disks carrying the advertising were hung in the coaches of suburban trains. Dodgers which looked somewhat like paper money were used with enthusiasm by employees, who also co-operated in sending out postcards with personal messages to friends and acquaintances. The merchants and the hotel men also tied into the campaign, being favorably affected by increased travel.

Advertising Pays

An idea of the part played by advertising in these sales may be gained from the fact that in May, 1929, the Southern Pacific put in effect the same low fares for one day, the anniversary of the driving of the last spike at Promontory, Utah, in 1869. Nearly the same amount of advertising pressure was placed back of the fares, but the advertising itself was mainly of a good will and public relations nature, the ads, while devoting some space to the fares, featuring principally the new construction of the company, its expenditures for equipment, payrolls, etc. Comparing the results, the first Dollar Day sale, in February, 1931, in the depths of a depression, produced 50 per cent greater revenues than the May, 1929, sale, held at the peak of prosperity.

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading in the week ended November 7 amounted to 717,029 cars, a seasonal reduction of about 23,000 cars as compared with the week before. As compared with the corresponding week of last year this was a reduction of 164,488 cars and as compared with 1929 it was a reduction of 331,939 cars, but in both instances comparisons are being made with periods when the trend was downward. Loading of grain and grain products showed an increase of 1,429 cars as compared with the corresponding week of last year and of 1,023 cars as compared with 1929, and coke loading showed a small increase as compared with the week before. The summary, as compiled by the Car Service Division of the American Railway Association, follows:

Revenue Freight Car Loading

Week ended Saturday, November 7, 1931

Districts	1931	1930	1929
Eastern	158,213	192,074	231,071
Allegheny	135,501	170,421	216,029
Pocahontas	45,458	51,825	61,600
Southern	104,273	129,032	143,989
Northwestern	85,122	117,483	144,295
Central Western	120,655	143,278	163,060
Southwestern	67,807	77,404	88,924
Total Western Districts	273,584	338,165	396,279
Total All Roads	717,029	881,517	1,048,968
Commodities			
Grain and Grain Products	40,347	38,918	39,324
Live Stock	26,890	29,166	33,988
Coal	133,879	172,315	191,810
Coke	6,043	8,725	11,767
Forest Products	23,356	37,614	58,465
Ore	9,387	28,613	41,785
Mdse. L.C.L.	212,678	236,731	267,879
Miscellaneous	264,449	329,435	403,950
November 7	717,029	881,517	1,048,968
October 31	740,363	934,715	1,072,234
October 24	769,673	959,492	1,134,360
October 17	761,719	931,105	1,185,564
October 10	763,864	954,782	1,179,540
Cumulative total, 45 weeks	33,096,473	40,786,567	46,720,639

The freight car surplus for the week ended October 31 averaged 535,254 cars, an increase of 2,953 cars as compared with the week before. The total included 290,639 box cars, 185,442 coal cars, 22,322 stock cars and 10,749 refrigerator cars.

Car Loading in Canada

Revenue car loading at stations in Canada for the week ended November 7 totaled 61,171 cars, a decrease from the previous week of 125 cars and a decrease from the same week last year of 4,084 cars.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada		
November 7, 1931	61,171	21,875
October 31, 1931	61,296	23,162
October 24, 1931	61,654	23,327
November 8, 1930	65,255	30,704
Cumulative Totals for Canada		
November 7, 1931	2,240,345	1,144,231
November 8, 1930	2,785,886	1,498,977
November 9, 1929	3,122,040	1,853,707

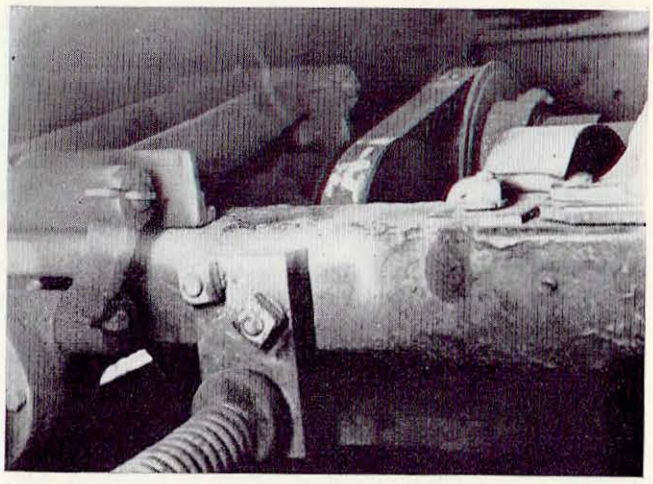
For the seven years, 1924-1930, the heaviest loadings were for the forty-third week, or around the end of October, although in 1930, due to an early harvest, the peak was for the second week in September and in 1925 it was for the third week in November.

To facilitate accurate comparisons of loadings this year with previous years and to determine the trend, the Bureau of Statistics at Ottawa has adjusted the loadings for the seasonal variations using the seven years' records (1924-1930) as a basis, adjusted the holidays, putting them in the same weeks each year, and computed index numbers using the average for 1926 as 100. It is shown that in 1930 the usual increase for the autumn months did not materialize and again this year

there was a corresponding drop in the index numbers, the bottoms apparently being reached about the end of August. Since then there has been an encouraging increase although the loadings are still well below the 1926 loadings and also below last year's.

Loadings for the week ended November 7 amounted to 61,171 cars which was a decrease of 125 cars from the previous week and of 4,084 cars from the loadings of the same week last year. Grain loadings were heavier than in 1930 by 3,304 cars, coal increased by 43 cars and coke by 99 cars, but all other commodities showed decreases, merchandise being down 2,322 cars and miscellaneous freight 2,026 cars.

For the forty-five weeks ended November 7, total loadings amounted to 2,240,345 cars which was a decrease from 1930 loadings of 545,541 cars, or 19.5 per cent, and a decrease from 1929 loadings of 28.2 per cent.



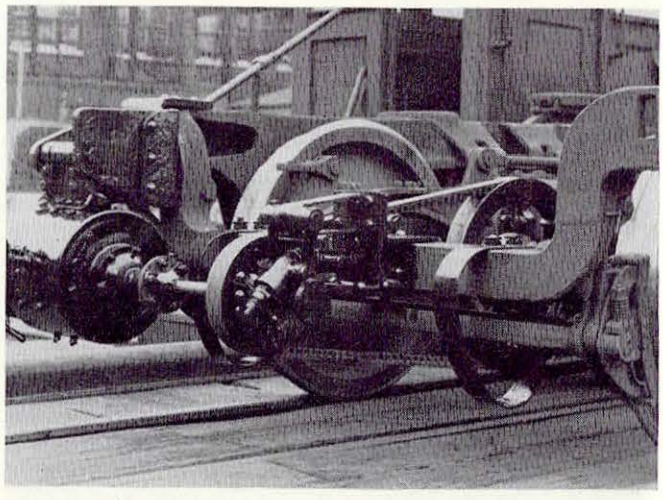
A Portion of the Gear Box, Suspension, Pulleys, Belt, Fastener and Tension Spring Used on the Body-Hung Drive

V-Belt Drive for Carlighting Generators

V-BELT drives for both body-hung and axle-mounted carlighting generators have been developed and, with the aid of several railroads, have been tried out in service, by the Dayton-Roderwald Company, Dayton, Ohio.

The generator suspension used in connection with the truck-mounted drive differs from the usual method in that the generator is mounted rigidly on the truck and does not swing in a suspension. One V-sheave made in two parts is clamped on the axle over either a rubber or corrugated metal bushing by means of bolts. A second or driven V-pulley is mounted outside the end sill on an adjustable tension device. The two pulleys are connected by a V-belt of such construction that it will take a fastener. The driven pulley in turn drives the generator through a short shaft and two fabric type universal joints.

The generator may be moved on its suspension by means of an adjusting screw and the universal joints lined up in this manner. With this arrangement the belt is relieved of shocks caused by the swinging weight of the generator and the tension of the V-belt need only be about one-fourth that which is used with a flat belt. The belt was developed in Germany and the rights for its manufacture and production in America have been acquired by the Dayton-Roderwald Company. The American manufactured belt has also been modified to meet conditions on railroads in this country. A rocker type fastener is used.



The Truck-Mounted V-Belt Generator Drive as Applied to a Type M Truck

The drive as developed for body-hung generators employs the same type of axle pulley and a driven pulley which is mounted inside the end sill. The driven pulley in turn drives the generator through a pair of double gears in a gear box and a splined shaft. The gear box and driven pulley are suspended from the truck and a spring is used to exert a pull on this suspension and hold the proper tension on the belt. There is a universal joint at either end of the splined shaft, the combination of spline and universal joint movement allowing for angularity of the truck on curves. Grease lubricated ball bearings are used in the gear box and also on the tension end of the jack shaft in the case of the truck-mounted drive.

The mechanical parts of the body-hung drive have been in operation constantly for over 100,000 miles with no maintenance costs except for lubrication. Belts having different types of construction have been tried and the last belt applied has run 45,000 miles. The wear on this belt at 45,000 miles is small and no fastener or splice troubles have been encountered.

The most recently designed truck-mounted drive has seen something more than 110,000 miles of service and there has been no complaint as to noise, maintenance or riding qualities. No adjustments or lubrication have been required. The present type belt has gone over 62,000 miles and together with the fastener is in excellent condition. Present performance indicates that maximum generator output is assured and that from 150,000 to 200,000 miles belt life can be expected.

The principal reason for developing this type of equipment is to provide a positive drive which can be depended upon to provide full generator output under all weather conditions. The belt is 2 in. wide by about 1 in. thick and has a 28-degree included angle. The inside edge of the belt is notched out to provide flexibility without reducing the grip of the pulleys on the belt. The lower part of the V in the pulleys are open so that snow and dirt will be forced through and out by the action of the belt. Application of a belt in the field is easy as the securing of the fastener requires only the insertion of two cap screws.

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A few weeks ago (in the issue of October 10) we told of the "petrified zoo," which is one of the most notable things about the Missouri-Kansas-Texas station at Hiattville, Kan. This is not the only Katy Station where the unusual is to be found. At the Highland Park station, Dallas, Tex., there is a small grove of banana trees. They are the especial pride of W. G. Crush, assistant to the executive vice-president of the Katy.

Slogan Contest Closes

The contest for a slogan to be used in connection with the advertising of the Norfolk & Western merchandise freight transportation has closed. A total of 2,289 suggestions were received by the committee of judges. More than 400 employees participated in the contest. Of these, 113 work in the motive power department and other departments were also well represented. Employees in the headquarters of the railway at Roanoke furnished the largest number of suggestions, as was expected. However, substantial numbers were received from other points both on and off the railroad, two suggestions coming from San Francisco, Cal.

Pennsylvania Helps the Blind

It was a "soulless" corporation that announced the other day that blind persons who are accustomed to rely upon trained dogs to direct their steps may be accompanied by such dogs on the trains of the corporation without extra charge. In making this humane announcement, the Pennsylvania railroad expressed its eagerness to extend every possible courtesy and aid to blind travelers. As in recent years, trained dogs have come into wide use as guides to such persons and are companions as well as assistants, the road felt that master and servant should not be separated. Only dogs for which traveling permits have been issued by the American Foundation for the Blind will be admitted to passenger accommodations and the Pennsylvania suggests that such dogs should not be teased or in any other way distracted from their duty. These are obviously reasonable conditions of a privilege, the granting of which indicates that some corporations at least are not without something closely resembling a heart.—Editorial in New York Evening Post.

Royal Situation Wanted

We are indebted to C. R. Shaw, assistant engineer, Lafayette division, Southern Pacific lines in Texas and Louisiana, for a copy of a letter written by a section foreman to his former employer, asking for re-employment. The letter was written in 1895, at the time when the Aransas Pass Railroad of Texas was in operation.

"O Emperor of the Aransas:

"Listen to the petition of one of thy servants. Dost thou need a king for one of thy small principalities? Hath none of their heads become sore from wearing the crown? And hath none of thy snipes become lazy for want of proper attention by the king? Hath none of thy rail joints become low? Hath none of thy levels become hillocks? Hath not the grass of the Johnson flourished in the 'rain'? Hath none of the scrub longhorned cows become muleys and Jerseys of high grade after crossing with a railroad engine?

"If you are suffering from any of these ails and ills generally or specifically on any section of any of your principalities, then crown me king, rest contented, eat plenty, sleep o' nights, and be happy.

"Your crownless servant,
JOE LYTEL."

Why Enginemen Turn Gray

Locomotive engineers, constantly on the alert to avoid loss of life and to prevent accidents, frequently have nerve-racking experiences. Illustrative of this is a report recently made to Superintendent E. E. Hanna by Engineer M. McComas. Although written in the usual routine manner it not only shows the burden and strain placed upon engineers by trespassers and others, but proves again that eternal vigilance is the price of safety. It follows:

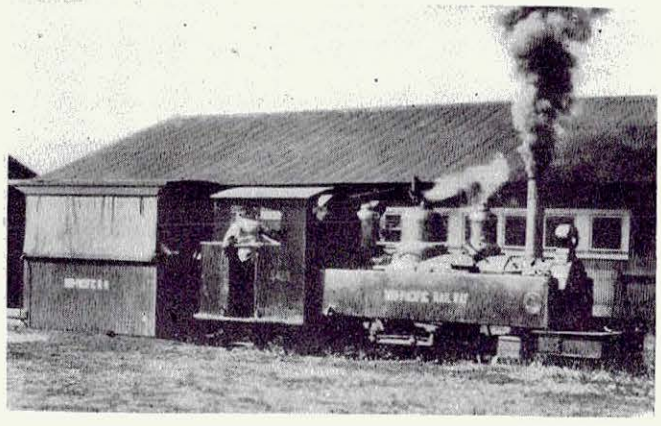
"As train No. 311 was entering the Trinity River bridge at Fort Worth, we noticed two boys trying to get across the bridge ahead of the train. One boy got down onto a cap and jumped off; the other continued to run and fell and it looked like we would strike him, I had slowed the train down to slow, safe speed, in order to prevent striking him, which otherwise would have been unavoidable.

"The following day as train No. 311, engine 364, was approaching the main highway crossing near milepost 233, an automobile backed onto the track just ahead of us. I made an emergency application of the air to keep from striking the automobile. The reduction in speed allowed the car just time enough to clear the crossing."—From the Missouri-Kansas-Texas Employees Magazine.

Fair Exchange

When an officer of the Mid-Pacific railroad of Hawaii visited California, he was entertained by an officer of the Southern Pacific, who presented him with a pass over the Southern Pacific lines, and who in turn received a pass over the Mid-Pacific railroad. Somewhat later the Southern Pacific officer went to the Hawaiian Islands where he boarded a Mid-Pacific train and presented his pass.

The pass was honored, of course, but the visitor was somewhat disconcerted to find that the Mid-Pacific system has three miles of line only. It is operated by the United States Army and the cars are named after the Hawaiian kings who used to reign over the islands.



Part of the Rolling Stock of the Three-Mile Mid-Pacific

Compared with September, 1930, for Roads with Annual Operating Revenues Above $25,000,000

Region, road and year	Average number of freight cars on line: Home	Foreign	Total	Per cent unserviceable	Gross ton-miles per train-hour, excluding locomotives and tenders	Gross ton-miles per train-mile, excluding locomotives and tenders	Net ton-miles per train-mile	Net ton-miles per loaded car-mile	Net ton-miles per car-day	Car-miles per car-day	Net ton-miles per mile of road per day	Pounds of coal per 1,000 gross ton-miles, including locomotives and tenders	Locomotive-miles per locomotive-day
New England Region:													
Boston & Albany.....1931	3,621	3,148	6,769	14.0	21,653	1,422	474	17.2	311	26.9	5,234	157	37.6
1930	2,908	3,608	6,516	7.3	20,217	1,538	558	18.9	398	31.4	6,366	153	41.7
Boston & Maine.....1931	11,045	7,370	18,415	11.6	21,971	1,711	630	18.9	337	25.7	3,006	107	42.6
1930	10,957	8,952	19,909	7.8	21,661	1,758	673	19.9	386	27.7	3,717	104	49.8
N. Y., New H. & Hart..1931	19,718	12,671	32,389	15.1	24,069	1,684	633	20.1	261	19.9	4,135	104	47.5
1930	17,885	14,483	32,368	13.5	23,611	1,939	758	21.4	308	22.3	4,765	101	48.1
Great Lakes Region:													
Delaware & Hudson.....1931	10,841	3,668	14,509	3.9	25,148	1,972	898	28.4	498	28.6	8,477	116	42.6
1930	9,006	5,031	14,037	4.4	25,651	1,997	944	31.0	650	33.7	10,430	117	52.4
Del., Lack. & Western..1931	18,469	4,817	23,286	8.2	24,765	1,822	716	21.9	382	26.0	8,901	134	56.0
1930	17,265	6,419	23,684	5.9	25,171	1,937	778	22.7	454	30.0	10,773	128	60.1
Erie (inc. Chi. & Erie)..1931	34,907	12,899	47,806	4.5	38,944	2,633	943	22.0	463	34.8	9,556	95	53.9
1930	36,188	16,803	52,991	4.2	38,476	2,741	1,042	23.4	528	37.1	12,084	99	62.9
Grand Trunk Western....1931	4,788	7,772	12,560	11.1	23,008	1,370	473	20.4	262	21.3	3,221	102	46.8
1930	4,314	9,779	14,093	7.6	23,431	1,568	570	20.8	304	23.0	4,208	98	51.4
Lehigh Valley 1931	21,774	5,586	27,360	10.6	29,105	1,779	718	24.4	345	22.4	7,032	133	41.2
1930	20,086	7,819	27,905	8.3	28,234	1,955	829	25.6	443	26.8	9,205	133	50.7
Michigan Central 1931	25,271	16,609	41,880	6.8	32,404	1,794	583	19.2	169	15.1	3,792	103	57.8
1930	23,967	13,658	37,625	5.4	33,699	1,962	694	21.3	265	21.1	5,348	98	69.7
New York Central.....1931	78,056	64,559	142,615	12.5	32,823	2,268	913	24.9	343	22.8	7,553	95	44.3
1930	76,162	65,223	141,385	6.4	32,083	2,413	996	25.6	406	26.2	8,881	93	49.6
New York, Chi. & St. L..1931	15,836	7,435	23,271	10.1	29,091	1,835	649	20.6	418	33.4	5,852	96	63.5
1930	15,563	9,205	24,768	9.6	28,461	1,897	692	21.5	514	39.5	7,665	94	71.8
Pere Marquette 1931	12,956	4,095	17,051	3.6	22,474	1,430	571	25.0	336	22.4	2,606	92	58.1
1930	9,633	6,167	15,800	4.5	22,356	1,560	610	24.4	501	34.2	3,594	90	69.0
Pitts. & Lake Erie.....1931	19,651	4,890	24,541	9.6	38,440	3,111	1,723	45.6	159	6.0	16,649	90	29.5
1930	17,304	6,403	23,707	6.0	38,051	3,079	1,725	43.7	229	8.9	23,427	97	44.9
Wabash 1931	21,345	9,768	31,113	8.1	33,458	1,814	627	20.0	382	30.2	4,760	102	49.0
1930	19,305	10,464	29,769	3.4	30,635	1,835	676	21.3	509	37.1	6,073	106	62.5
Central Eastern Region:													
Baltimore & Ohio.....1931	79,173	19,297	98,470	5.6	26,395	2,073	901	29.2	398	22.8	7,080	133	46.6
1930	78,386	26,077	104,463	5.6	26,031	2,241	1,010	30.5	497	26.9	9,368	132	57.2
Big Four Lines.....1931	25,719	20,756	46,475	7.6	30,700	1,925	848	28.0	359	21.2	6,157	105	47.8
1930	22,727	23,383	46,110	3.7	30,956	2,089	961	30.2	488	26.7	8,304	104	53.9
Central of New Jersey...1931	16,781	7,226	24,007	13.1	25,457	2,055	882	29.3	209	12.9	7,261	136	41.5
1930	17,028	9,261	26,289	8.5	24,580	1,994	894	30.7	256	14.9	9,737	137	51.0
Chicago & Eastern Ill....1931	5,972	2,616	8,588	12.8	24,764	1,437	590	25.1	386	24.5	3,528	116	36.4
1930	13,079	3,371	16,450	47.6	26,217	1,626	706	26.0	281	16.5	4,881	119	45.5
Elgin, Joliet & Eastern..1931	9,428	4,014	13,442	5.9	15,864	1,859	919	39.1	181	8.0	5,455	116	30.8
1930	9,576	5,527	15,103	4.0	16,584	2,105	1,086	39.5	280	11.4	9,334	112	45.9
Long Island 1931	789	5,017	5,806	.9	6,823	851	298	25.5	77	5.9	1,119	299	44.2
1930	714	5,893	6,607	.9	7,202	1,001	363	25.7	89	6.5	1,476	280	42.9
Pennsylvania System.....1931	240,574	55,864	296,438	5.9	30,654	2,260	994	28.7	327	18.2	9,121	118	46.9
1930	228,452	75,686	304,138	4.6	29,902	2,430	1,095	29.9	406	21.6	11,574	113	52.2
Reading 1931	36,617	10,151	46,768	5.9	23,921	2,044	945	34.1	311	15.9	10,024	130	45.3
1930	32,591	11,524	44,115	4.8	22,224	1,992	953	34.3	391	19.7	11,901	134	56.5
Pocahontas Region:													
Chesapeake & Ohio.....1931	46,394	10,078	56,472	3.2	44,568	3,406	1,836	46.2	1,039	41.1	18,867	73	49.7
1930	41,450	11,496	52,946	2.4	39,810	3,137	1,668	44.8	1,183	48.6	20,133	80	63.5
Norfolk & Western.....1931	36,639	5,440	42,079	.9	43,727	3,062	1,592	42.9	808	32.5	14,971	105	49.2
1930	33,208	7,659	40,867	1.1	44,721	3,214	1,678	44.6	1,054	41.4	19,312	105	59.2
Southern Region:													
Atlantic Coast Line.....1931	27,934	4,542	32,476	5.9	17,584	1,107	395	19.3	192	15.8	1,211	115	34.2
1930	25,918	5,961	31,879	6.9	18,923	1,313	486	20.5	276	21.6	1,706	106	41.0
Central of Georgia.....1931	7,528	2,253	9,781	17.4	20,355	1,258	478	20.8	345	24.9	1,777	120	48.4
1930	6,723	2,996	9,719	10.7	19,851	1,393	551	21.4	423	29.1	2,162	120	50.0
Ill. Cent. (inc. Y. & M. V.)1931	52,492	14,001	66,493	13.1	24,646	1,608	622	26.3	438	28.6	4,368	126	54.2
1930	47,289	17,131	64,420	7.2	25,543	1,799	730	27.0	599	36.9	5,764	118	63.8
Louisville & Nashville....1931	49,762	6,869	56,631	16.1	22,238	1,493	697	32.9	439	23.2	4,721	135	55.2
1930	47,280	11,531	58,811	11.3	21,942	1,517	711	33.4	551	29.0	6,176	127	69.5
Seaboard Air Line.....1931	17,384	3,878	21,262	14.1	19,293	1,327	488	20.8	322	24.7	1,532	125	49.9
1930	16,430	5,297	21,727	4.3	19,369	1,431	550	22.5	395	28.3	1,917	123	53.8
Southern 1931	55,226	10,928	66,154	13.5	19,872	1,304	491	20.8	274	20.5	2,714	145	39.1
1930	53,783	13,960	67,743	13.5	19,939	1,346	527	21.8	325	22.8	3,297	143	44.2
Northwestern Region:													
Chi. & North Western...1931	44,426	21,198	65,624	8.7	21,746	1,508	545	22.0	311	23.5	2,413	117	49.8
1930	50,014	25,412	75,426	7.7	22,508	1,654	611	23.5	368	26.7	3,280	113	56.7
Chi. Gt. Western.....1931	4,556	4,037	8,593	8.4	32,976	1,957	714	22.8	660	50.1	3,884	119	72.9
1930	4,189	4,711	8,900	7.3	29,600	1,961	746	22.5	781	55.9	4,764	120	97.3
Chi., Milw., St. P. & Pac.1931	61,761	15,003	76,764	2.3	24,827	1,675	654	24.9	384	26.3	2,611	113	54.9
1930	57,490	19,324	76,814	2.7	24,810	1,840	752	25.8	510	32.8	3,460	112	62.1
Chi., St. P., Minn. & Om.1931	2,220	8,416	10,636	13.0	17,413	1,223	483	23.5	351	23.9	2,180	117	50.2
1930	2,484	10,085	12,569	7.5	16,946	1,237	513	23.6	393	25.1	2,880	112	63.3
Great Northern 1931	43,722	13,115	56,837	6.4	31,179	2,241	925	27.5	396	24.9	2,703	110	40.1
1930	42,143	15,144	57,287	4.8	32,421	2,569	1,193	30.8	640	33.9	4,394	102	50.7
Minn., St. P. & S. St. M.1931	20,608	3,338	23,946	3.7	19,780	1,347	565	23.9	280	18.1	1,548	97	57.9
1930	19,795	5,268	25,063	4.1	22,233	1,746	810	27.1	501	28.3	2,870	86	72.9
Northern Pacific 1931	41,577	5,791	47,368	10.5	24,750	1,681	654	21.8	294	20.3	2,156	139	46.3
1930	40,439	6,461	46,900	9.6	26,520	1,957	833	24.9	454	27.4	3,292	136	56.6
Ore.-Wash. R.R. & Nav..1931	8,493	2,908	11,401	3.0	23,921	1,609	686	25.0	346	20.1	1,780	135	48.8
1930	7,990	3,814	11,804	4.0	23,360	1,720	749	25.9	435	24.4	2,307	149	55.0
Central Western Region:													
Alton 1931	10,387	3,058	13,445	15.3	26,087	1,427	537	24.2	288	20.4	3,875	117	58.1
1930	10,192	4,065	14,257	6.4	24,122	1,484	577	24.3	366	24.4	5,214	120	65.6
Atch., Top. & S. Fe (incl. 1931	69,251	11,465	80,716	9.2	32,164	1,856	630	21.2	398	30.5	2,785	97	61.0
P. & S. F.).....1930	66,664	15,357	82,021	7.5	33,110	2,013	678	20.6	488	38.0	3,550	97	70.3
Chi., Burl. & Quincy....1931	45,316	13,666	58,982	7.1	25,508	1,717	718	25.0	458	31.3	2,921	115	57.9
1930	44,803	19,160	63,963	6.1	26,860	1,940	842	26.5	597	38.2	4,118	112	63.5
Chi., Rock I. & Pacific..1931	38,751	11,032	49,783	11.2	22,762	1,481	589	24.5	385	25.4	2,515	125	52.6
1930	35,830	16,437	52,267	8.9	22,712	1,602	644	24.7	483	31.7	3,323	124	60.3
Denver & R. G. Wn.....1931	13,308	4,796	18,104	3.0	24,924	1,734	607	21.7	325	25.2	2,298	154	48.0
1930	12,397	5,595	17,992	2.4	23,054	1,740	607	23.0	395	30.7	2,818	152	60.9
Los Angeles & Salt Lake.1931	4,289	1,305	5,594	4.1	26,525	1,670	601	20.2	598	44.2	2,698	129	58.1
1930	4,793	1,331	6,124	1.8	26,219	1,818	685	23.0	659	46.3	3,309	130	61.2
Oregon Short Line.....1931	8,970	4,673	13,643	5.4	28,057	1,859	666	22.1	518	38.6	2,789	101	66.4
1930	8,830	5,904	14,734	4.7	27,844	2,034	763	24.3	630	43.5	3,653	104	78.4
So. Pacific—Pacific Lines.1931	41,976	24,576	66,552	11.3	27,852	1,982	659	21.1	384	30.2	2,859	111	50.2
1930	41,143	28,510	69,653	4.9	28,000	2,064	692	21.4	493	38.3	3,822	111	63.8
Union Pacific 1931	24,624	10,230	34,854	7.4	47,184	2,291	706	18.7	690	62.6	6,381	101	79.9
1930	23,398	12,130	35,528	8.8	44,155	2,282	698	19.2	913	82.0	8,612	98	105.1
Southwestern Region:													
Gulf, Colo. & S. Fe.....1931	10,281	2,397	12,678	2.8	23,499	1,512	628	24.2	308	18.5	1,986	102	52.2
1930	11,274	3,259	14,533	3.5	30,876	2,134	853	24.9	423	27.5	3,132	92	64.9
Mo.-Kans.-Texas Lines...1931	12,263	3,891	16,154	4.8	26,337	1,709	636	22.4	442	32.9	2,174	83	50.4
1930	14,123	5,858	19,981	5.4	28,029	1,964	765	23.3	491	35.1	3,088	85	57.0
Missouri Pacific 1931	30,888	14,413	45,301	11.7	25,427	1,687	636	23.8	534	37.2	3,263	117	67.8
1930	31,148	18,679	49,827	11.2	28,204	1,886	735	25.2	691	46.2	4,636	112	78.2
St. Louis-San Francisco..1931	27,513	6,287	33,800	3.2	21,858	1,418	544	23.7	345	24.3	2,253	126	46.3
1930	26,010	7,982	33,992	3.2	21,218	1,565	607	23.9	426	29.8	2,799	131	52.9
St. Louis Southwestern 1931	6,141	2,988	9,129	10.1	21,039	1,342	485	20.7	305	23.5	1,465	103	41.6
Lines 1930	6,762	3,337	10,099	6.4	22,994	1,640	628	22.2	436	31.1	2,353	98	60.2
Texas & New Orleans....1931	12,285	11,942	24,227	7.6	20,066	1,392	529	23.6	347	24.1	1,795	92	48.6
1930	11,763	13,657	25,420	5.1	21,373	1,551	599	23.7	480	33.0	2,606	91	63.4
Texas & Pacific.....1931	6,363	5,232	11,595	13.1	22,964	1,552	568	21.8	419	30.0	2,494	88	34.7
1930	5,800	4,694	10,494	7.3	27,095	1,828	684	23.7	748	53.8	4,022	84	47.6

NEWS

(Continued from page 797)

"Had the waterways been developed 50 or 60 years ago, there is no doubt that they might have performed a useful service, but we feel, and our experience with them has been, that they are a needless duplication of transportation facilities which already exist. We do not feel that they are truly performing the service for which they are intended, nor what is claimed for them, but are in a measure conducing to the breakdown of the business of the country.

"From the point of view of our own industry, or at least that part of it we represent, they have proved to a decided detriment, especially to our farming communities which, of course, it was the purpose to aid. The lower and in many cases, unfair rates made, only serve to break down markets which are served only in part by the waterways. These reduced returns reflect upon the producer both directly and indirectly through increased freight rates made necessary to keep the railroads moving and without the railroads, we would either go back to the dark ages or be compelled to construct millions of dollars of highways to accommodate tens of thousands of additional trucks. We feel it a great pity that our army engineers and officers can find no better use for their talents and time."

Re-Opening of Western Livestock Case Denied

The Interstate Commerce Commission has denied petitions filed by the southwestern railroads and various livestock interests for a re-opening of its proceedings in which the commission recently prescribed a general revision of livestock rates in the western district.

Draft Gear Case to Be Argued

The Federal Trade Commission will hear oral arguments on December 16 at Washington on its complaint against the Mechanical Manufacturing Company, of Chicago, and officials of Swift & Co., alleging unfair methods of competition in the sale of draft gear to railroad companies.

Correction

The operating department witness of the New York, Chicago & St. Louis, at the Detroit, Mich., hearing of the Interstate Commerce Commission in Ex Parte 104—Practices Affecting Operating Revenues and Expenses—was Willard A. Collie, superintendent of transportation, and not W. A. Carley as incorrectly reported in the *Railway Age* of November 7.

Railway Employment in September

A further reduction of nearly 34,000 in the number of employees of Class I railroads took place between the middle of August and the middle of September, according to preliminary statistics issued by the Interstate Commerce Commission. The number in September was 1,254,280, as compared with 1,288,074 in August. This was a reduction of 15.59 per cent as compared with August, 1930, and 28.24 per cent as compared with August, 1929.

Montreal Trains Consolidated

The Boston & Maine has consolidated its four Montreal trains into two, for a portion of their trips. The Alouette, which goes by way of the Canadian Pacific, and the Ambassador, which goes by way of the Canadian National, will be consolidated into a single train (leaving Boston at 9 A. M.) as far as Concord, N. H.; and the Red Wing and the New Englander, the two night trains, will be consolidated as far as White River Junction. The corresponding southbound trains will be combined over the same divisions. The trains hitherto were scheduled from 30 to 60 minutes apart. The night trains will leave Boston at 8:45 p. m.

Mexican Officers Hold Annual Convention

The Mexican Association of Railroad Officers held its fifth annual convention in Mexico City on October 26-31, at which reports dealing with many aspects of railway operation and maintenance were presented and discussed. The convention was opened with an address by J. Sanchez Mejorada, executive president of the National Railways of Mexico. Reports were presented by various members on the following subjects: Flat wheels, equipment betterments, standardization of materials, air brakes, modernizing locomotives, lighting passenger coaches, water for locomotives, fuel economy, flagging, reduction of delays while unloading ballast, freight terminals, and the reduction of the number of forms for tickets and passes.

> I do not oppose barge lines as a means of transportation if private industry, private initiative and private capital bring about their development on a basis of fair competition with existing systems, but I do oppose their development at the expense of the taxpayer by the use of public money, and before the tax burdens of this country are tremendously increased by the issuance of bonds on the part of the government or the various municipalities for harbors and wharves, I believe that a fact finding body should undertake to determine whether there is any possibility of the waterways, when developed, adding any beneficial facilities to the people of this country . . . We have reached a crisis and if we of the insurance and banking business have any influence in the community we should be exercising it for a reduction of the level of public expenditures . . . Taxes on real estate have risen so rapidly in recent years as to rob home ownership of its security . . . Does the average policyholder know that 45 per cent of the obligations of the American railroads are held by life insurance companies and savings banks of the mutual type? . . . The insurance companies are in the most strategic position to undertake the organized, intelligent distribution of the facts in the situation.
>
> *—Lyman E. Wakefield, President, First National Bank, Minneapolis, Minn., Addressing the American Life Convention, Pittsburgh, Pa.*

Freight Traffic in September

The volume of freight traffic moved by the Class I railroads in the first nine months of 1931 amounted to 261,819,675,000 net ton-miles, according to reports compiled by the Bureau of Railway Economics. This was a reduction of 59,675,414,000 net ton-miles, or 18.6 per cent, under the traffic of the corresponding period of 1930, and a reduction of 107,870,976,000 net ton-miles or 29.2 per cent under that of the same period in 1929.

The Eastern district showed a reduction of 18.1 per cent, the Southern 18.3 per cent, and the Western 19.3 per cent.

For September, the total was 27,847,085,000 net ton-miles; which, compared with September, 1930, was a reduction of 8,385,282,000 net ton-miles, or 23.1 per cent; and it was a reduction of 16,374,925,000 net ton-miles or 37 per cent under September, 1929.

October Locomotive Shipments

October shipments of railroad locomotives from principal manufacturing plants, based on reports received by the Department of Commerce, totaled nine locomotives, as compared with four in September and 50 in October, 1930. The following table shows shipments and unfilled orders of locomotives for October, 1930 and 1931, the 1930 totals and totals for the first ten months of the two years:

Railroad Locomotive Shipments

Year and Month	Domestic			Foreign	
1931	Total	Steam	Electric	Steam	Electric
October	9	8	..	1	..
Total (10 mos.)	140	107	20	13	..
1930					
October	50	48	2	..	..
Total (10 mos.)	671	632	20	16	3
Total (year)	763	706	33	17	7

Unfilled Orders, end of October

	Domestic			Foreign	
	Total	Steam	Electric	Steam	Electric
1931	112	7	105	..	..
1930	132	96	31	1	4

Santa Fe Cuts Running Time of Pacific Coast Trains

Reductions in the running time of several of its Chicago-Pacific Coast trains and the rerouting of others will be placed in effect on November 29, by the Atchison, Topeka & Santa Fe.

The time of the Chief, eastbound from Los Angeles, will be reduced from 57 hr. and 55 min. to 56½ hr. This train will leave Los Angeles at 10:30 p.m. and arrive at Chicago at 9 o'clock on the third morning.

The westbound Grand Canyon Limited between Chicago and Los Angeles will be

(Continued on Next Left Hand Page)

DEPRESSION
has forced
Locomotive Obsolescence

- AS LONG as the traffic was there to move, the railroads were not under pressure to weed out the older power.
- But depression has had a selective effect and the necessity of returning the maximum net out of a diminishing gross has forced the intensive use of the most efficient motive power.
- With the return of normal business, the necessity of maintaining the maximum net will prohibit the introduction of the older and less efficient locomotives into a schedule of operation adjusted to the use of highly efficient motive power.
- Do not let the old locomotives waste the increasing gross. Buy new Super-Power and keep efficiency up to its present standard.

LIMA LOCOMOTIVE WORKS
Incorporated

LIMA — OHIO

run through in 62 hr.; leave Chicago 10:45 p.m., arrive at Los Angeles at 10:45 a.m. on the third day.

The Navajo, eastbound, will be run over the northern route, through Albuquerque, N. M., and La Junta, Colo., instead of through Amarillo, Tex., while westbound it will move as at present over the Panhandle route. This train will leave Los Angeles at 9:45 a.m. as at present, and will arrive in Chicago at 7:45 on the third morning. The Missionary, westbound, will also be shifted to the northern route, although no change will be made in its running time.

Experimental Reduction in Upper Berth Rates to Be Continued

The series of "travel sales experiments" conducted by the Pullman Company seems to have indicated so far that better service is sometimes more of a revenue producer than a rate reduction. A 37½ per cent reduction in the rate for upper berths thus far has had little effect in popularizing the use of upper berths, but the company's "S.O.S." (single-occupancy-section) plan, by which a passenger may have an entire section for 40 per cent more than the rate for a lower, has increased revenues a million dollars.

On the ground that the experimental reduction in upper berth rates put into effect on August 20 between Washington and New York and between Chicago and the Twin Cities has not yet had sufficient time to make a fair test, although it has not yet produced results, the company has obtained from the Interstate Commerce Commission authority to continue the experimental reduction for another three-months' period, from November 21 to February 29. The authority was granted in the form of a sixth-section permission to extend the effective date of the tariffs. In applying for the extension the company said that so far the reduction of the upper berth rate from 80 per cent of that for a lower, which had been in effect since 1911, to 50 per cent of the lower berth rate, had not attracted sufficient additional occupancy of the upper berths to offset the reduction in rate nor to permit the furnishing of desired accommodations in a lesser number of cars. However, it thought the experiment warranted a further trial.

Signaling in Need of Correction

The Interstate Commerce Commission has issued the report of W. P. Borland, director of the Bureau of Safety, on a derailment which occurred on September 30, last, at Kankakee, Ill., on the Cleveland, Cincinnati, Chicago & St. Louis, wherein the fireman was killed and the engineman injured, and where, although the accident was recorded as due to the failure of the engineman, the visibility of the signal, which he ignored, is held to be in need of correction.

The train, westbound passenger train No. 35, moving over the sharp curve of the wye leading to the Illinois Central, over which the train was to proceed to Chicago, was moving at only about 10 miles an hour, but the derail was open and the locomotive was overturned with the fatal result noted.

The train was in charge of a Big Four crew, but the locomotive had just been taken in charge, at the Big Four Station by Engineman Cahill of the Illinois Central. As he entered the curve (of 8 degrees) about 1200 ft. long, his first view of the signal which governed the entrance to the Illinois Central track was through the branches of trees and he took the indication of the three-unit color-light signal to be yellow; but the weight of evidence is that it was red, and Cahill finally admitted that he may have been mistaken. Shortly after passing the trees he had an unobstructed view of the signal from a distance of about 450 ft., but he had his attention diverted by the making of the running test of the airbrakes and evidently did not again look at the signal. The signalman in KX tower, a few hundred feet north of the derail, noticed that No. 35 approached faster than usual instead of coasting along, watching for the signal, as was the usual practice. A road foreman of engines testified that light in the signal in question, when viewed from an angle, as was the case on this occasion, looks like a dirty yellow. Inspectors of the Commission made observations tending to confirm this judgment.

Although train movements over this curve are always made at low speed, the report nevertheless calls for "such changes as will make it certain that the indications can be observed clearly and correctly."

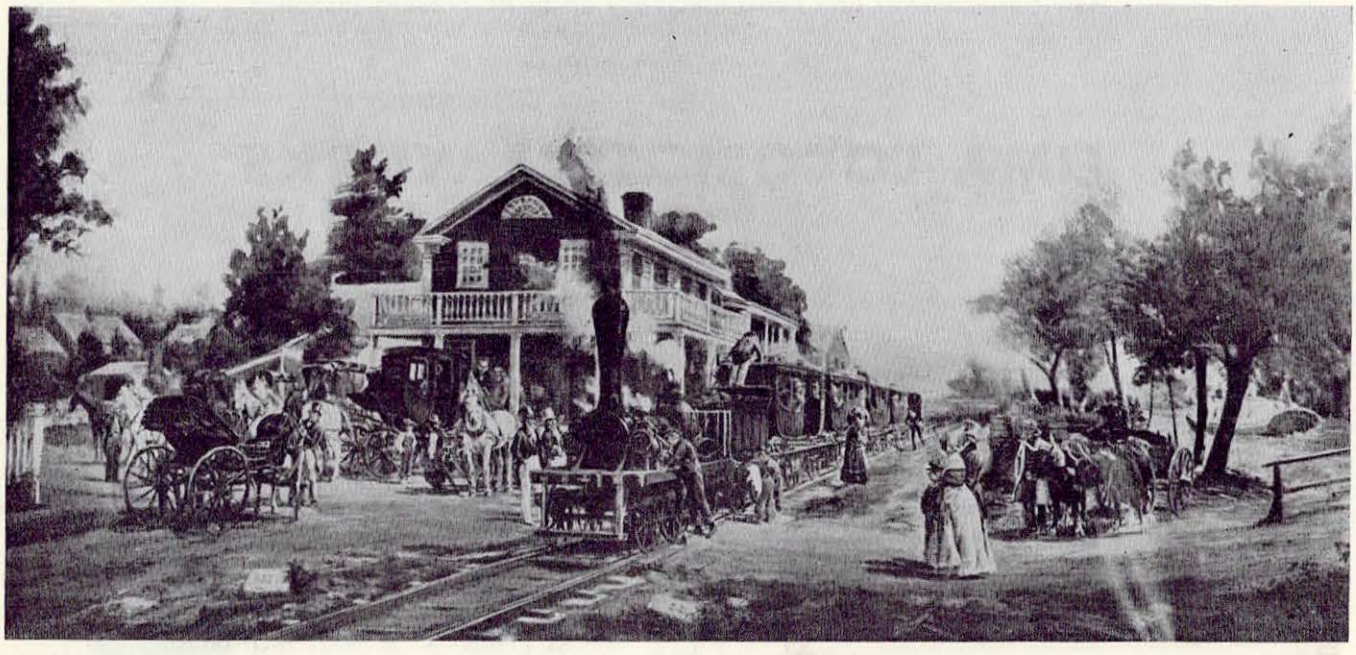
Centenary of the John Bull

The old Pennsylvania Railroad locomotive "John Bull", the first locomotive to run in the state of New Jersey, which for many years has been in retirement at the Smithsonian Institution at Washington, is this month celebrating the centenary of its first use, which was on November 12, 1831. The engine, with its tender and one passenger car, will be on display in the Hall of Transportation of the Institution throughout November and December. It will be jacked up off the ancient rails on which it stands so that the wheels can be revolved. The motive power, however, will be compressed air, not steam.

This engine arrived from England in August, 1831, and two months later was used to haul the first passenger train over the Camden & Amboy, now a part of the Pennsylvania system. There was, however, no regular steam service for about two years, horses being used until 1833.

The exhibition will include an elaborate series of photographs within the passenger car; and, on a pedestal near the train, a replica of the monument at Bordentown, N. J., which marks the location of the first piece of track laid on the Camden & Amboy.

In 1893, the John Bull was run from Jersey City to Chicago, under its own steam, for exhibition at the Columbian



Station of the Camden & Amboy at Bordentown, New Jersey; About 1831
From an Old Painting

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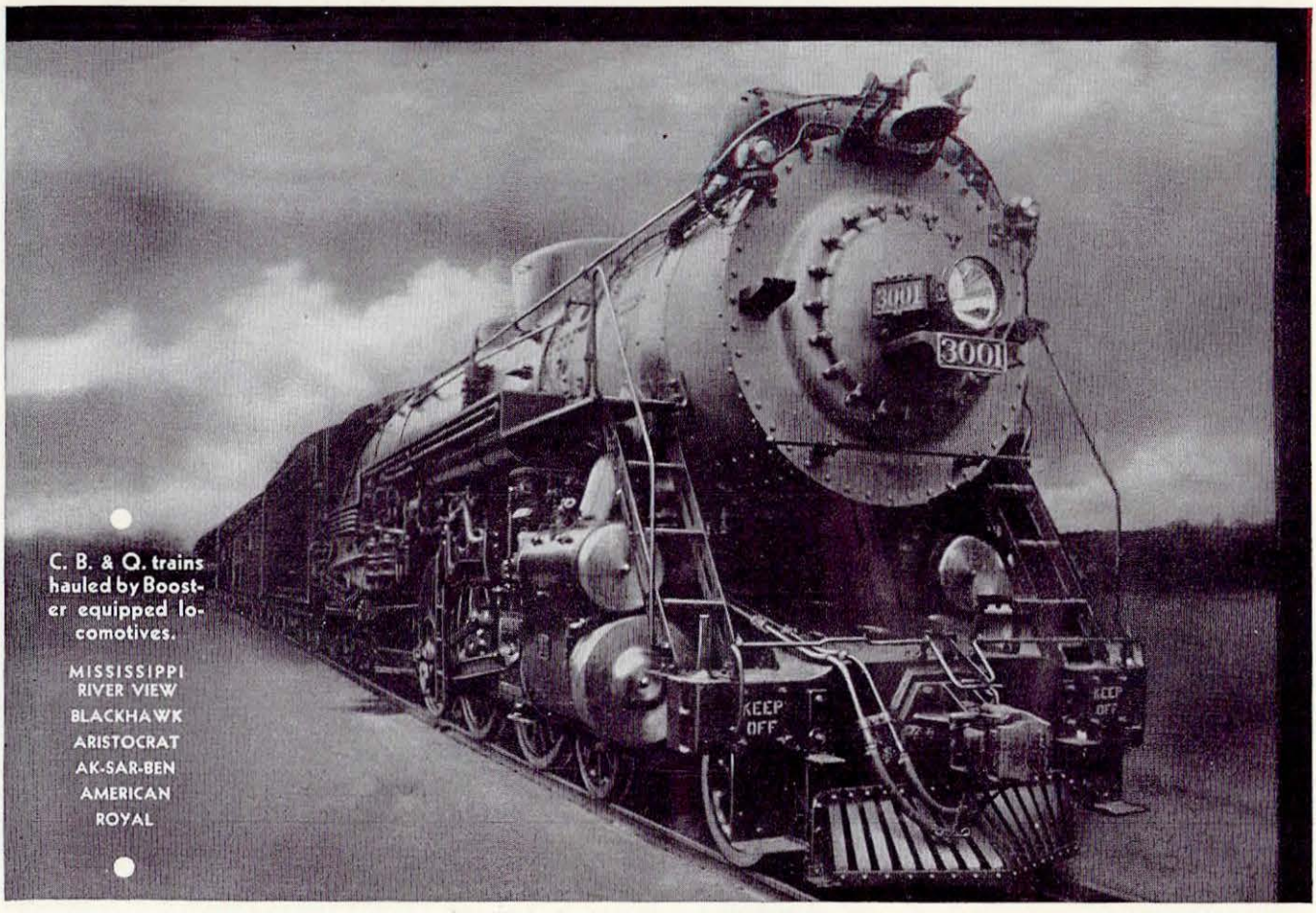


C. B. & Q. trains hauled by Booster equipped locomotives.

MISSISSIPPI RIVER VIEW
BLACKHAWK
ARISTOCRAT
AK-SAR-BEN
AMERICAN
ROYAL

ALL C. B. & Q. FIRST CLASS TRAINS
ARE HAULED BY BOOSTER-EQUIPPED LOCOMOTIVES

From Chicago to Minneapolis and St. Paul; from Chicago to Lincoln, Nebraska; and from Chicago to Kansas City, all C. B. & Q. first class passenger trains ride with the smoothness and ease typical where the Booster-equipped locomotive is used.

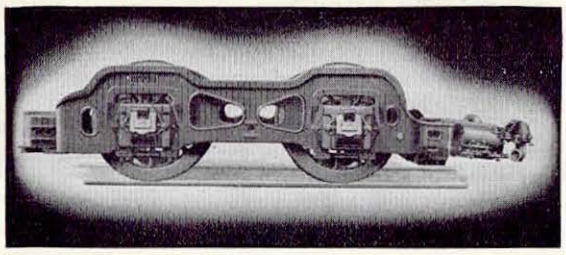
Boosters, on the passenger engines hauling these trains are used principally in starting and in accelerating. Due to their extra power, heavier trains are started. There is no jerking or rough handling in taking slack. Good will is promoted and on-time runs result.

Passenger locomotives today are built with greater power per pound of weight. Such intensified production of power calls for the incorporation of The Locomotive Booster. By including the Booster in your passenger locomotive designs, you will save increased operating and maintenance expense that a larger locomotive will require in doing the same amount of work.

THE FRANKLIN SLEEVE JOINT

A reliable conduit free from limitations in movement permitting short Vertical Pipes and greater rail clearance.

THE LOCOMOTIVE BOOSTER



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NEW YORK CHICAGO SAN FRANCISCO
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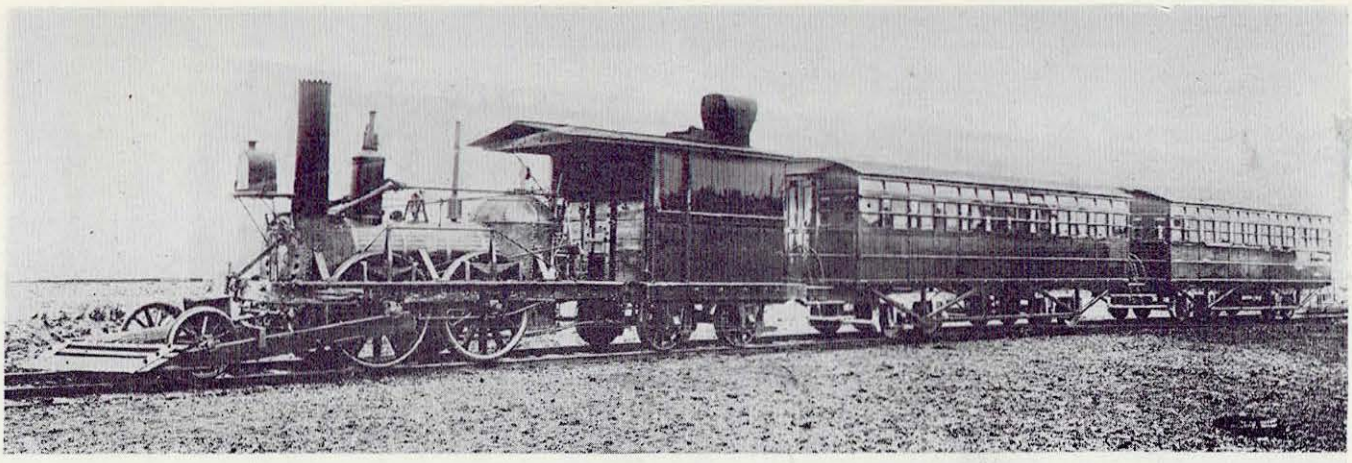

The John Bull and Its Train
First locomotive operated in New Jersey. Engine, tender and cars reconditioned in 1893.

Exposition. The picture of the locomotive, tender and two 8-wheeled cars, printed herewith, shows the train as it appeared in that year. The pilot, with its two wheels, and the tender, were additions made some time subsequent to 1831. This picture was reproduced in the *Railroad Gazette* of April 21, 1893, page 298.

The cars, as re-conditioned in 1893, were said to appear substantially as they did when built, though they had new seats, and new wheels and axles.

Our picture of the Bordentown station, with the train, carriage, oxen and other features, is from a photograph of an old painting.

The John Bull was exhibited at the Centennial in Philadelphia in 1876 and an engraving of it appeared in the *Railroad Gazette* of March 9, 1877, page 105.

Pennsylvania Limited Completes Half Century

The Pennsylvania Limited, the pioneer fast train between New York and Chicago, over the Pennsylvania, has this week celebrated the completion of a half century, its first trip having been made on November 19, 1881. The road has issued a brief historical sketch of the train. It is said that it has never missed a single trip. It has carried more than six-and-a-half million passengers and has made more than 36,000 trips. The length of the line is 908 miles, making the aggregate train-mileage more than 33 millions.

At first the train was the "New York-Chicago Limited" and there was no dining car; but "hotel cars" were equipped with kitchens, and meals were served on portable tables placed between the berths. The lighting of the train was gas and the lavatories were supplied with water by hand pumps. Dining cars were added in 1882, and observation cars in 1889. The running time at first was 26 hours, 35 minutes, which was seven hours faster than the time previously made by the best trains.

The present name, "Pennsylvania Limited," was given to the train in 1891 when marked improvements were made in the cars. In that year and for some time afterward the cars were painted green below the window sills and cream color above. Since 1902 the cars have been painted the standard Tuscan red. The train is said to be the first in the world to have been lighted by electricity. Today, the train runs through each way in 20 hours, and has a number of companion trains making the same speed.

N. M. Butler Urges Relief for Railways

A demand for relief of the railways from unregulated competition was embodied by Dr. Nicholas Murray Butler, president of Columbia University, among 14 declarations of principle and policy, recommended to the Republican party in an address delivered at New York on November 18, before the committee of National affairs of the National Republican Club.

Dr. Butler's suggested platform plank on the railway situation reads as follows:

"That legislation shall be enacted to protect the railways of the United States from unfair and unregulated competition in interstate commerce by agencies which, without supervision or regulation, use roads built at huge expense by public tax. Ownership of the railways and of their obligations is distributed among millions of people, and the railways alone normally offer employment to about 1,750,000 persons, of whom perhaps 500,000 are just now without work. If we are to regulate the building, the financing, the operation of the railways and the rates charged by them, surely the least that can be done in all fairness is to pursue precisely the same policy in regard to those new competitive agencies in interstate commerce which have lately come into existence."

Annual Report of Panama Canal

Traffic through the Panama canal during the year ending June 30, 1931, was appreciably less than in the three fiscal years preceding, and both revenues and expenses declined. The services afforded to shipping were, however, maintained according to the established standards, according to the annual report of H. Burgess.

The number of transits of commercial vessels during the year was 5,529, as compared with 6,185 in 1930, a decrease of 656, or 10.6 per cent. Net tonnage of transiting vessels totaled 27,792,146 tons, Panama canal measurement, as compared with 29,980,614 tons in 1930, a decrease of 7.3 per cent. Tolls levied during the year on commercial seagoing vessels amounted to $24,645,456.57 as compared with $27,076,890.01 for 1930, a decrease of $2,431,433.44 or 9 per cent. Cargo carried through the canal during the year amounted to 25,082,800 long tons as compared with 30,030,232 tons for 1930, a decrease of 16.5 per cent.

The decrease in the number of commercial transits and the amount of cargo carried through the canal, occurred among vessels of all the major trade routes with the exception of that between Europe and the west coast of the United States and Canada; this route showed a slight increase in transits with a decrease in cargo tonnage carried.

The net income from tolls and other miscellaneous receipts known as canal revenue was $14,847,227.21. This was less than the net revenues for the fiscal year 1930 by $3,235,224.57, or approximately 18 per cent. These revenues for the past five years have been $15,611,093.80 in 1927, $18,224,844.86 in 1928, $17,729,775.01 in 1929, $18,082,451.78 in 1930, and $14,847,227.21 in 1931. With deduction of $7,512,922.19 as a fixed capital charge, the canal operations showed a surplus of $7,334,305.02 in 1931. Based on an interest-bearing capital indebtedness of $535,571,809.48 at the end of the fiscal year 1931, the net revenue of $14,847,227.21 in 1931 was equivalent to a return of approximately 2¾ per cent.

The aggregate net revenue from all sources was less than that for any year since 1925. This shortage is due, primarily, to decreased shipping activities for the year as compared with the preceding five years. "Considering the capital invested and accumulated interest on the investment," the report says, "the present total capital liability is such that the canal is not as yet earning the annual interest charge at 4 per cent. For this reason and others, including the necessity of extensive additional expenditures in order to bring the canal to its highest efficiency, it would appear that at present there is no occasion to consider a reduction in tolls."

[Data concerning the commodities and the total freight moved through the canal

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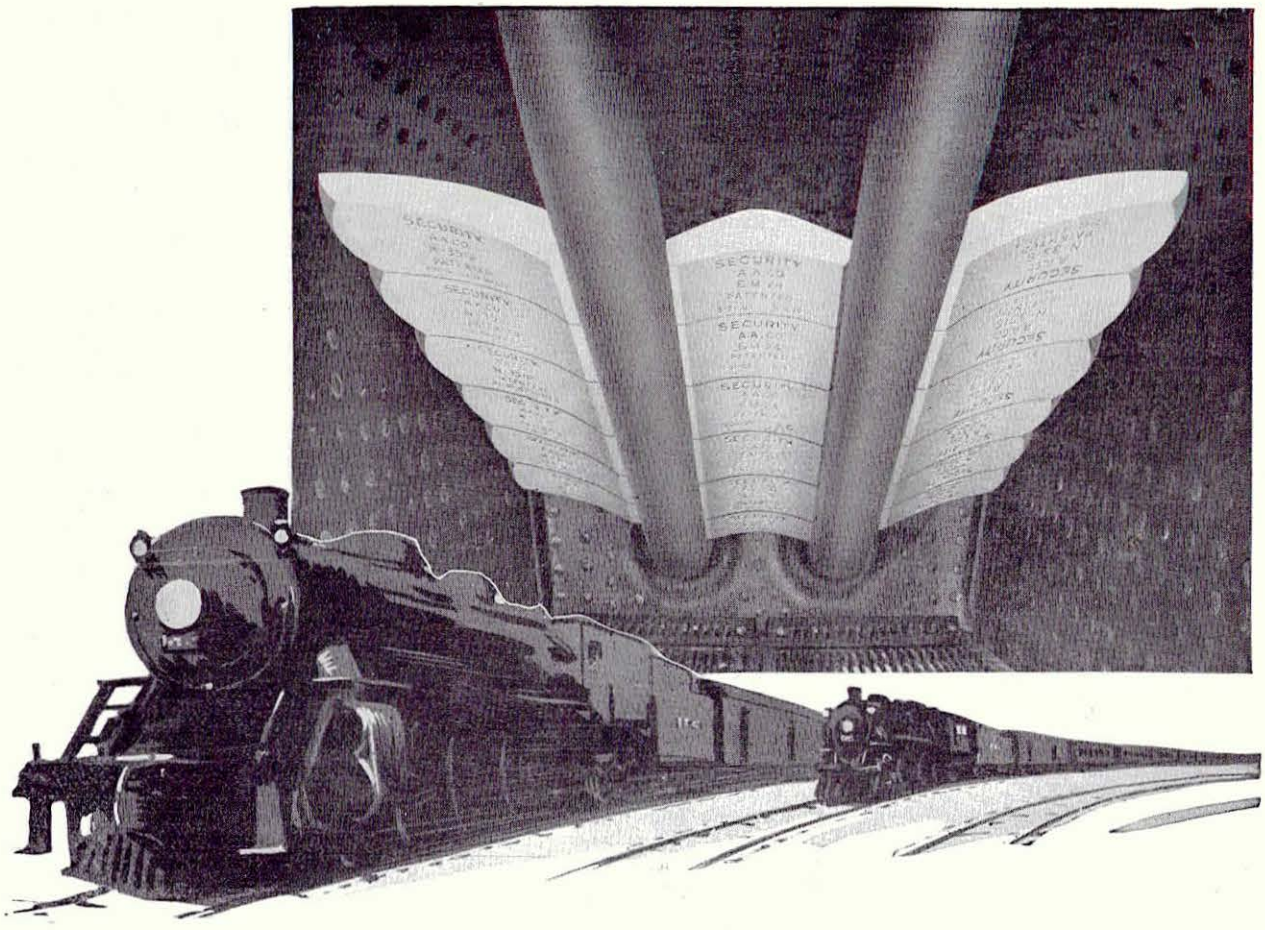

How A "Bad Water" Handicap Was Overcome

BAD WATER was causing excessive arch brick consumption due to the necessity for frequent removal of arch tubes.

Service engineers of the American Arch Company helped the railroad overcome the trouble by careful organization of arch tube cleaning and inspection and certain engineering changes.

Here is an instance of the practical value of the 21 years of study and experience in locomotive combustion that is possessed by American Arch Company engineers.

It is an added value that is thoroughly appreciated by American Arch Company customers.

THERE'S MORE TO SECURITY ARCHES THAN JUST BRICK

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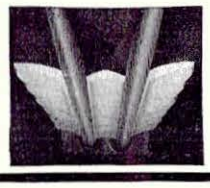
Refractory Specialists



AMERICAN ARCH CO.
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Locomotive Combustion Specialists » » »

in the fiscal year, as reported in the Panama Canal Record, will be found in the *Railway Age* of November 14, page 767.]

Proposed Charge for Additional Passenger in Pullman Berth

No witnesses appeared in opposition to the proposal of the Pullman Company to make a charge of 20 per cent of the lower berth rate for an additional passenger in a berth, at the hearing before Examiner W. A. Disque of the Interstate Commerce Commission on November 17. The commission has suspended the rate for seven months on protests filed by the Travellers' Protective Association, two theatrical companies, and the state commissions of Arizona, New Mexico and Nevada. The latter were represented by C. S. Bailey, assistant general solicitor of the National Association of Railroad and Utilities Commissioners, who filed an exhibit as to Pullman earnings for the Arizona commission but offered no testimony.

L. S. Taylor, vice-president, and other officials of the company, testified that the charge would apply to only 6 or 7 per cent of their passengers and that it was estimated it would produce an increase of $750,000 a year in normal times and $671,000 a year under present conditions. Mr. Taylor said that since the company's investment is so largely in movable, depreciable property, and since its business is dependent upon its ability to negotiate contracts with railroads, it ought to earn a higher rate of return than a railroad; but that in the three years ended with 1929, which he called normal years, it had earned only 4.13 per cent on investment and 4.29 per cent on value. In 1930 this had fallen to 1.62 and 1.85 per cent and in the first six months of 1931 to 0.64 and 0.75 per cent. This reduction in earnings gave the company great concern, he said, and a campaign was undertaken to increase efficiency, reduce costs and promote Pullman travel by a series of travel sales experiments. One of these, the S. O. S., or single-occupancy section plan, he said, had increased revenues by a million dollars, and one of the first suggestions to be made was that the company should receive some revenue from the six or seven per cent of its passengers who were receiving its services free although paying fare to the railroads. He said the reasonableness of the charge seemed too apparent to be questioned.

Exhibits introduced by the company showed that its operating income for the first half of 1931 was only $833,185, as compared with $2,291,180 in the first half of 1930 and an average of $4,248,273 for the full years 1928, 1929, and 1930. It was also shown that the average lower berth rate in October, 1930, and August, 1931, was $3.83 and that the second passenger charge would average $.766. On this basis was made the $671,920 additional revenue estimate under present conditions. Another exhibit showed that while in 1924, 44 per cent of the railroad passenger-miles, exclusive of commutation, represented Pullman traffic, in the first half of 1931, 65 per cent of the passenger-miles were in Pullman cars, showing that most of the reduction in railroad passenger business has been in the shorter hauls. As illustrating the economies effected by the company it was shown that although the average number of revenue passengers per car per day had been reduced from 12 in 1925 to 9 in 1930, the average mileage per car per day had been increased from 347.07 to 378.9. The ratio of expenses to revenues, however, had increased from 79.19 to 90.46. The company's property investment in 1931 was given as $258,983,578, and its property value based on commission methods of valuation was placed at $224,395,783.

Motor Trucks in Fruit Marketing

Motor trucks are hauling approximately 15 per cent of the total shipments of fresh fruits and vegetables transported 20 miles or more to market, according to the Bureau of Agricultural Economics, U. S. Department of Agriculture, reporting a recent survey. These shipments in 1929 are estimated by the bureau at from 150,000 to 200,000 cars, compared with 1,068,745 cars transported by rail and boat lines. Rail and boat shipments have, however, practically doubled in the last ten years. On a mileage basis, says the bureau, the percentage of motor truck to total shipments is much less than 15 per cent because of the longer average haul by railroads.

The survey reveals that in areas covered by the bureau's inquiry, motor truck hauls ranged from 92 per cent in Connecticut and 73 per cent in southwestern Michigan, down to 2 per cent in some regions. Long Island showed 68 per cent; the Hudson Valley, 67 per cent; central and southern New Jersey 67 per cent; Delaware, 41 per cent; southern Indiana, 37 per cent; eastern shore of Maryland, 24 per cent; western Maryland, 24 per cent; southern Illinois, 21 per cent; and western New York, 19 per cent. In Florida, southern Texas, California, the Northwestern States, and northern Maine, the percentage of shipments hauled by motor truck is much smaller than in the areas covered by the survey.

The report, "The Marketing and Distribution of Fruits and Vegetables by Motor Truck," is Technical Bulletin 272-T. It concludes with the following summary:

"Trucks have expedited transportation on short hauls, and have made the distribution of highly perishable products more direct and less wasteful under certain conditions. Regional motor-truck jobbing markets, where products from a considerable area are concentrated and redistributed, and wholesale roadside stands, are increasing in number to serve the motor-truck trade. Distances covered by trucks have increased; highly perishable products are now being hauled regularly as much as 400 miles, and even greater distances in some areas.

"For all areas in the north central and north eastern United States included in the study, the relation that motor-truck shipments of important commodities bore to the total shipments was, in terms of percentage: Spinach, 96; snap beans, 89; mushrooms, 85; asparagus, 76; tomatoes, 64; strawberries, 58; cantaloupes, 49; grapes, 48; peaches, 43. Commodities, a smaller volume of which moved by truck showed the following percentages: Potatoes, 25; apples, 24; lettuce, 21; sweet potatoes, 19; onions, 18; and cabbage, 12.

"The truck unloads of fruits and vegetables at the 11 cities studied (excluding market garden receipts) were of greatest relative importance at Los Angeles, where they constituted 57 per cent of total unloads for the city, and of least relative importance at Boston, where they constituted only 2 per cent.

"Redistribution from city markets to surrounding trade territories has grown in volume and in distance. Except for local supplies, the area within 50 miles is now usually supplied with fruits and vegetables by truck from the large city market. In the outer rim of the trade territory, up to 150 miles and sometimes farther, trucks compete with mixed cars and express shipments from the large city and with straight cars shipped direct from producing areas.

"It was estimated that 50 per cent of the total receipts on the wholesale markets at Pittsburgh was trucked out of the metropolitan area in the spring of 1930, and at Baltimore 24 per cent was trucked out.

"Country cold-storage plants aid motor-truck transportation by prolonging the trucking season. The use of the truck facilitates quick movement of apples into storage after packing, which is a decided advantage. Canning-plant managers are using trucks to obtain more soft fruits and tomatoes of desirable maturity and to extend the area from which supplies are received."

Railway Executives Hold Conference with Labor Leaders

Representatives of railway labor organizations, headed by D. B. Robertson, president of the Brotherhood of Locomotive Firemen & Enginemen and chairman of the Railway Labor Executives' Association, met with a committee of railway presidents, headed by Daniel Willard, president of the Baltimore & Ohio, in New York on November 19, for the purpose of discussing matters of mutual interest. It is understood that the stability of employment and related questions were among the subjects to receive attention, with the expectation that wage rates might also be unofficially discussed.

The meeting resulted from the acceptance by railway presidents of the Railway Labor Executives' Association suggestion that a joint conference be arranged to discuss "any proposal affecting railway operation which railway managements desire to advance" and "any proposals, including present and future relief of unemployment and stabilization of employment" which the labor organizations desire to advance.

Announcement that the invitation had been accepted was made in a statement issued by Mr. Willard following a meeting of the Association of Railway Executives at New York on November 13. The statement reads as follows:

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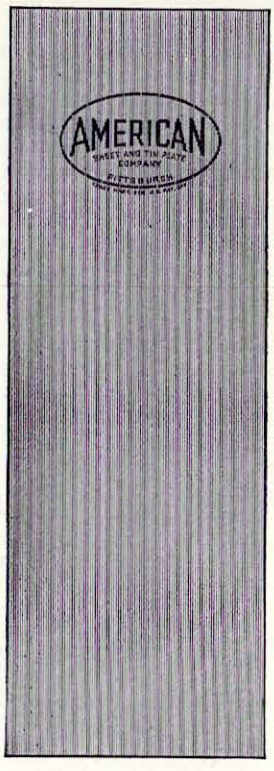

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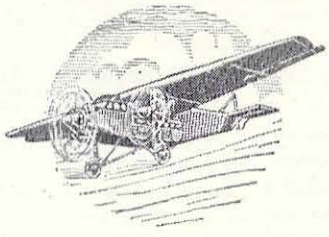

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THE LORAIN STEEL COMPANY
TENNESSEE COAL, IRON & RAILROAD CO.
UNIVERSAL ATLAS CEMENT COMPANY

Pacific Coast Distributors—Columbia Steel Company, Russ Bldg., San Francisco, Calif.

Export Distributors—United States Steel Products Company, 30 Church St., New York, N. Y.

"Following adjournment of the meeting of the Railway Executives' Association there was an informal meeting held of railway presidents, at which a small committee was appointed from the Eastern, Western and Southern regions to meet with Mr. Robertson and his associates at a meeting to be arranged in the near future. The members of the committee are: Western—L. A. Downs, president of the Illinois Central, L. W. Baldwin, president of the Missouri Pacific, and J. E. Gorman, president of the Chicago, Rock Island & Pacific; Southern—C. A. Wickersham, president of the Atlanta & West Point, A. C. Needles, president of the Norfolk & Western, and H. D. Pollard, president of the Central of Georgia; Eastern—C. E. Denney, president of the Erie, J. J. Pelley, president of the New York, New Haven & Hartford, and Daniel Willard, president of the Baltimore & Ohio."

It was not anticipated that any wage reduction agreement will result from the November 19 conference since such action would require the endorsement of the individual railroads and unions involved.

Meanwhile labor leaders, who were in New York last week, dined informally, on the evening of November 12, with the presidents of the four principal eastern trunk lines. Those attending this dinner were: Mr. Robertson, A. Johnston of the Brotherhood of Locomotive Engineers, A. F. Whitney of the Brotherhood of Railway Trainmen, S. N. Berry of the Order of Railway Conductors, W. W. Atterbury of the Pennsylvania, J. J. Bernet of the Chesapeake & Ohio, P. E. Crowley of the New York Central and Mr. Willard.

Late on November 19 the Railway Labor Executives' Association made public for the press of the following day a statement of the comprehensive program in the interest of organized railway labor. This program was the principal subject of the discussion held between the committee of railroad presidents, under the chairmanship of Daniel Willard, and the labor executives throughout the afternoon of November 19 and continuing on the following day. Salient features of the labor executives' program follow:

A definite number of employees should be assured permanent employment and auxiliary forces should be assured part-time employment, thus ending the feeling of insecurity on the part of a large proportion of railroad workers.

Creation of a mobile force of extra workers, shifting from road to road, as rolling stock is now shifted to meet traffic requirements. Through co-ordinated effort of managements and labor, average earnings per employee could be raised without a wage increase and labor efficiency would be augmented.

Motor transport should be required to observe the same principles of safe, efficient and socially just operation as are required of the railways. Railway employees displaced by motor transport should be given the opportunity to enter that field.

The working day should be shortened and reductions in working force should be brought about by employing fewer new men and reducing hours of labor.

The principal wage-lowering factor in railroad work is part-time employment. Stabilization would remedy this evil.

There should be provision for a payment on dismissal to all experienced employees discharged. There should be federal legislation providing for pensions and workmen's compensation.

There should be set up pay roll reserves to maintain employees' compensation during depression.

The following immediate measures were proposed:

Insuring one year's employment to the necessary employees in each class, thus freeing 1,250,000 workers from the fear of unemployment and increasing the purchasing power of a $2,000,000,000 pay roll.

Creation of a joint commission to study ways and means of applying the six-hour day to the different classes of employees.

Joint action to promote a $1,000,000,000 federal bond issue for grade crossing elimination; to regulate highway transport and find jobs in it for furloughed railroad employees; to protect the interests of all in consolidation; to promote federal pension and compensation insurance legislation; to establish an emergency employment bureau; and to coordinate train crews and train lengths "on the basis of economical, safe operation."

* * *

New Regulatory Rules Promulgated for Trucks in Germany

German motor trucks operating over routes of 30 or more miles in length have become subject to rigid licensing rules and rate regulations, according to an emergency decree issued by the government, effective November 1. Only factory-owned and operated fleets are excepted from the regulatory plan.

The new rules are designed to eliminate destructive competition between the German railways and motor trucks and will be accompanied by a reduction in railway freight rates on higher valued commodities. In addition to the license requirements the trucks operating over distances of more than 30 miles will not be permitted to charge rates lower than are provided in a schedule of all-German highway rates which is adjusted to railway freight rates.

The foregoing development follows an agreement entered early this year by the German railways with a highway trucking concern for the purpose of coordinating rail and highway freight service. Under the reduced rates it is expected that the railways will lose about $15,000,000 in revenue per year, but traffic gains, which will offset this decline are anticipated.

Foreign

Strowger-Hudd Automatic Train Control

On the Southern Railway of England, at Byfleet, there has been in regular use since March last, on the locomotive "Sir Gaheris," the Strowger-Hudd system of automatic train control, the proprietor of which is "Automatic Electric, Inc." of Chicago; but all the apparatus for which is said to be British made. This system was noticed in the report of the British Automatic Train Control Committee dated November 3, 1930, but without any formal commendation, the apparatus not having been tried. The government committee suggested that some road should make an experimental installation, and the Southern made favorable response to this suggestion.

The apparatus is described in a recent issue of the Railway Gazette (London). This line where the system was tried is operated by the manual block system and the locomotive is fitted with the automatic vacuum brake. Inductors fixed on the ties between the rails have magnetic effect on a receiver fixed on the locomotive in front of the leading axle, and an armature of this receiver, when moved, acts on the vacuum pipe of the brake system.

Inductor A, 200 ft. in the rear of the caution signal, gives warning that a caution signal is being approached; and inductor B, at the signal, indicates in the cab whether that signal is off or on. Inductor C, similar to B, is fixed close to the home or stop signal.

Inductor A, with a magnetic field at a right-angle to the track, influences the engine-carried receiver so as to open a pilot valve in the brake-pipe connection; this produces a short blast in the cab signal, which is a reed instrument called a 'hooter"; but this movement of air is not sufficient to produce a brake application.

Inductor B is connected with a wayside battery. The circuit is carried through a section of insulated rail (135 ft. long) so that it is dead except when the rails are electrically connected by the presence of a pair of wheels. When the signal is at caution, the battery is disconnected, and, as the electro-magnet, which lies parallel to the rails, is thus de-energized, the inductor actuates the receiver so that the train-control air-valve causes the application of the brakes; and the hooter continues to sound. But with the signal clear, the magnet is energized, the receiver closes the pilot valve and there is no brake application.

By means of an acknowledging plunger, the engineman, after passing the caution signal, may at once release the brake and silence the hooter; but if he should pass the stop signal when it is set against him, inductor C will stop him.

The system includes a speed control arrangement, but this has not yet been put in use. With this, actuated by an axle of the locomotive, it is proposed to prevent the use of the acknowledger (which

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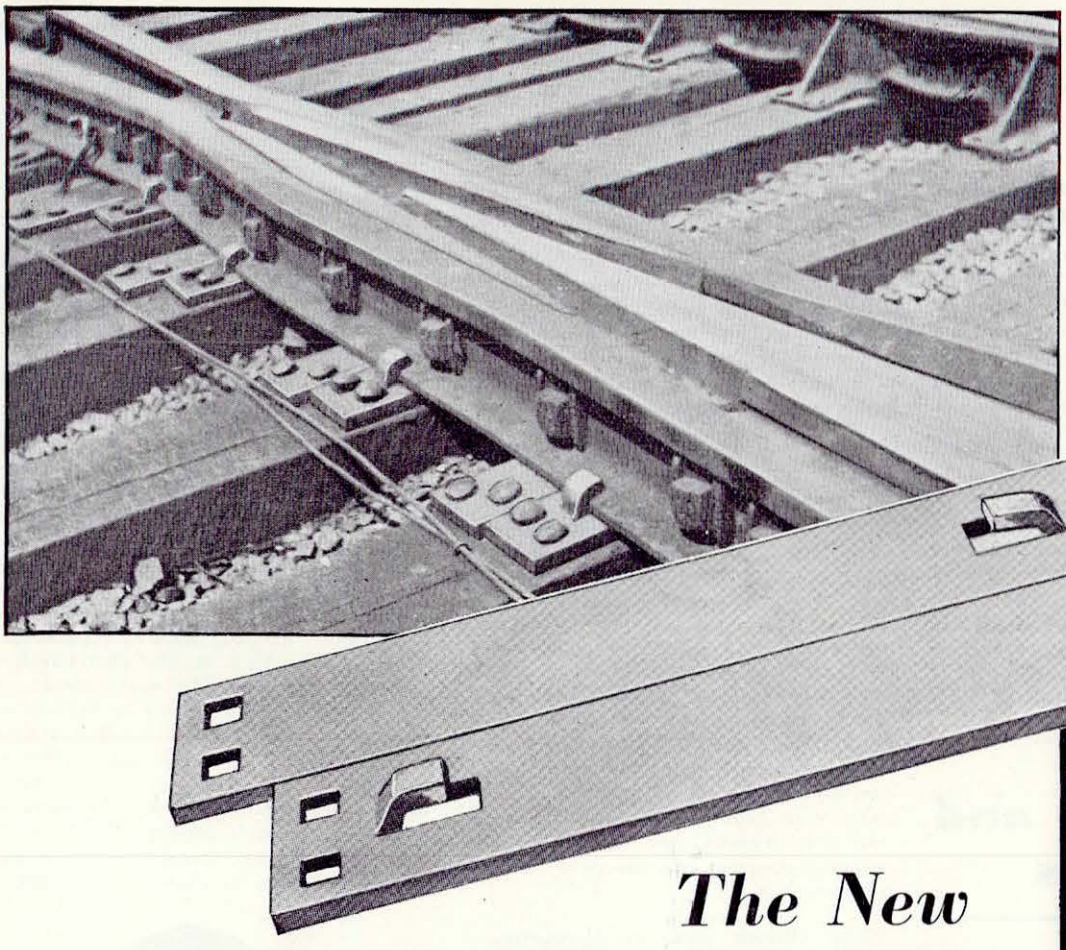

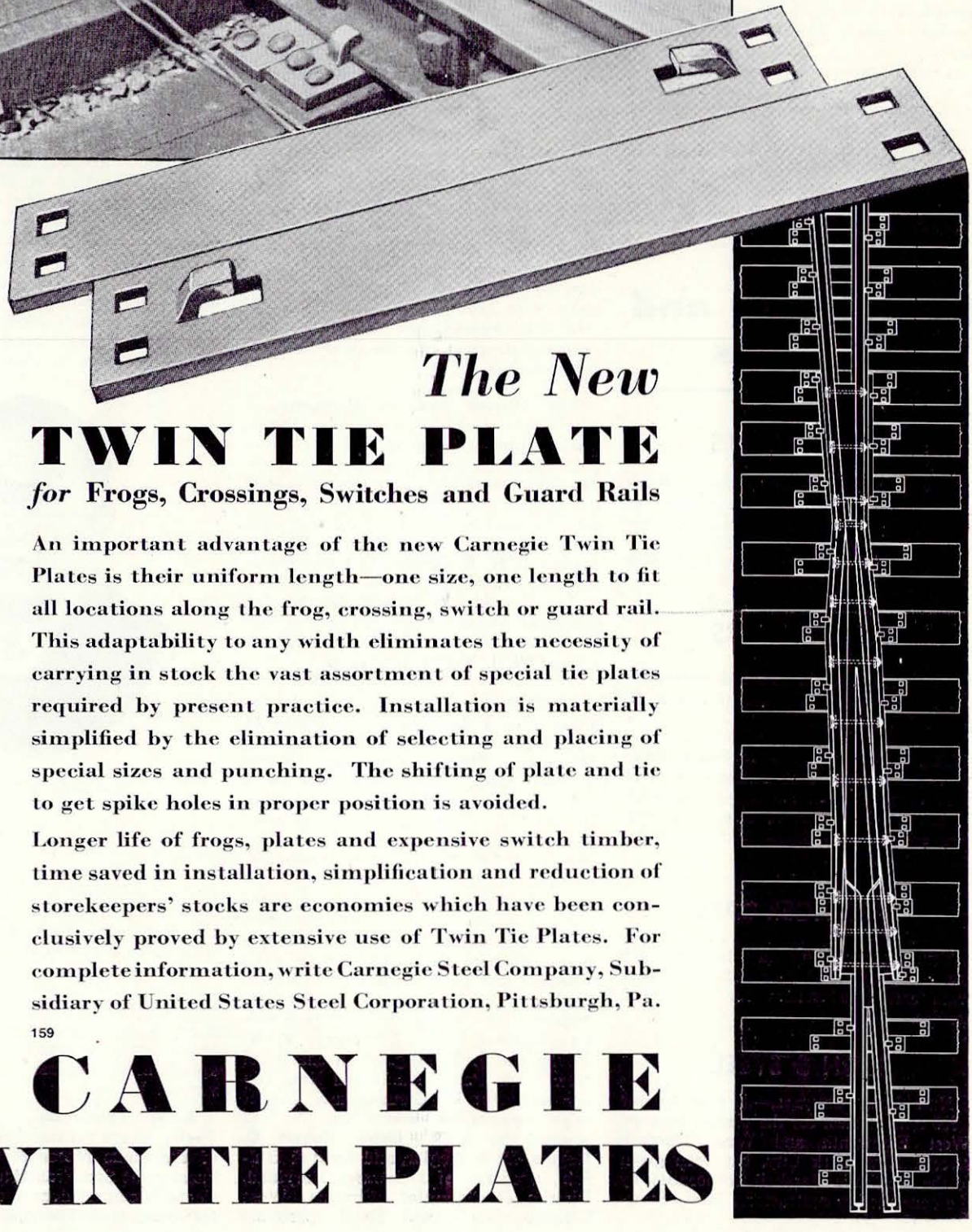

The New

TWIN TIE PLATE

for **Frogs, Crossings, Switches and Guard Rails**

An important advantage of the new Carnegie Twin Tie Plates is their uniform length—one size, one length to fit all locations along the frog, crossing, switch or guard rail. This adaptability to any width eliminates the necessity of carrying in stock the vast assortment of special tie plates required by present practice. Installation is materially simplified by the elimination of selecting and placing of special sizes and punching. The shifting of plate and tie to get spike holes in proper position is avoided.

Longer life of frogs, plates and expensive switch timber, time saved in installation, simplification and reduction of storekeepers' stocks are economies which have been conclusively proved by extensive use of Twin Tie Plates. For complete information, write Carnegie Steel Company, Subsidiary of United States Steel Corporation, Pittsburgh, Pa.

159

CARNEGIE TWIN TIE PLATES

is substantially a forestaller), except when the speed of the train is less than 25 m.p.h.

This system is to be tried on the London, Midland & Scottish, in Derbyshire.

Reduced Rates in Great Britain for Tourists' Automobiles

Railways of Great Britain were recently granted permission by the Railway Rates Tribunal to reduce their rates for the transportation by train of automobiles accompanied by two or more passengers. The reduced scale provides for a return of the automobile for 1½ pence per mile after it has been transported in one direction at three pence per mile. The latter was formerly the rate for both movements.

The new rates, according to an editorial note in a recent issue of Modern Transport (London), were promulgated after conferences between the railways and tourist organizations. The railways feel that the reduction will improve their revenue from the automobile traffic by encouraging more passengers to travel with their cars.

Equipment and Supplies

LOCOMOTIVES

THE SOUTHERN PERSIAN STATE RAILWAYS have ordered four locomotives of the 2-6-0 type from the Baldwin Locomotive Works. C. J. Carroll, director general and engineer in chief, Ahwaz, Bandar Shahpoor, Persia.

FREIGHT CARS

THE BOSTON & MAINE has authorized the construction of 25 caboose cars at its Concord, N. H., shops.

THE SOUTHERN PERSIAN STATE RAILWAYS have ordered 50 ballast cars of 30 tons' capacity from the Magor Car Corporation. C. J. Carroll, director general and engineer in chief, Ahwaz, Bandar Shahpoor, Persia.

PASSENGER CARS

THE READING COMPANY has arranged for changing 10 of its regular passenger train cars into trailers for its electric service.

IRON & STEEL

NEW YORK CENTRAL.—A contract for 7,500 tons of steel for the viaduct between West Eighteenth and West Thirtieth streets, New York City, has been given to the McClintic-Marshall Corporation by the construction contractors, James Stewart & Co., Inc.

Supply Trade

J. B. Berryman, first vice-president of the **Crane Company,** Chicago, has been elected president to succeed R. T. Crane, Jr., whose death was noted in the *Railway Age* of November 14.

C. W. Prescott, chief engineer of the **General Railway Signal Company,** London, Eng., has been appointed Australian representative of that company, with headquarters at 84 William street, Melbourne, Australia.

Edward C. Kenyon, representative, at Chicago, of the **Ashton Valve Company,** Cambridge, Boston, Mass., has been appointed Pacific Coast representative with headquarters at San Francisco, Cal., in charge of sales of the railroad and industrial departments.

The Railroad Materials Corporation, 30 Church street, New York, has been organized by **H. M. Buck** as president and **A. H. Smith** as vice-president. Mr. Buck was formerly vice-president and Mr. Smith was formerly sales representative of the Railroad Supply Company with headquarters at New York. The new organization will act as sales representatives of manufacturers of railway supplies.

The Ohmer Register Company, a wholly-owned subsidiary of the **Ohmer Fare Register Company,** was incorporated under the laws of Ohio on October 24. The Ohmer Register Company will act as the sales company for the products manufactured by the parent company. Its officers are as follows: **John F. Ohmer,** president; **H. B. Ohmer,** first vice-president; **R. L. Hubler,** second vice-president and sales manager; **John F. Ohmer, Jr.,** third vice-president and manager of Pacific Coast District; **R. M. Ohmer,** secretary; **W. J. Kuhns,** treasurer.

H. T. Potter has been appointed merchandising and advertising director of the recently formed **Ames Baldwin Wyoming Shovel Company,** North Easton, Mass. Mr. Potter was for a long time identified with the Wyoming Shovel Works, having joined that company in 1915 and later served as its president. **E. T. Nipher** has been appointed manager of production of the Ames Baldwin Wyoming Shovel Company, and the following appointments have been made in the sales department: **Norbert T. Jacobs,** general sales manager and **C. B. Steffey,** assistant to general sales manager; **Lou Braden,** district sales manager at Pittsburgh, Pa., assisted by **L. T. Bryan, F. K. Tovey** and **J. T. Hughes,** in charge of New York, Pennsylvania and New Jersey territory; **H. Cunningham,** district sales manager at Parkersburg, W. Va., assisted by **S. F. Cobb, Robert C. Rogers, H. J. Ziegler,** and **Sand & Hulfish,** in charge of Delaware, Maryland, District of Columbia, Virginia, West Virginia, North and South Carolina, Ohio, Kentucky, Indiana, Missouri and Kansas; **H. S. Bywater,** district sales manager at Chicago, assisted by **C. P. Tate,** in charge of Michigan, Illinois, Wisconsin, Minnesota, North and South Dakota, Nebraska and Iowa; **G. C. Barton,** district sales manager at New Orleans, La., assisted by **G. E. Brown,** in charge of Georgia, Florida, Alabama, Tennessee, Mississippi, Louisiana, Arkansas, Oklahoma and Texas; **H. M. Pforsich,** district sales manager at San Francisco, Cal., assisted by **G. W. Naylor,** in charge of California, Oregon, Washington, Montana, Idaho, Wyoming, Colorado, Utah, New Mexico, Arizona and Nevada.

James C. Younglove, general sales manager of the Western division, transportation and government department, of the Johns-Manville Corporation, New York, with headquarters in Chicago, has resigned to become general manager of the transportation and government division of the **American Hair & Felt Company** and the **Dry-Zero Corporation,** with headquarters in the Merchandise Mart at Chicago. The appointment of Mr. Younglove, who will continue to specialize in insulations for the transportation field, follows the establishment by these two companies of their own direct sales organization for the purpose of marketing their products in the railroad and general transportation fields. Heretofore, this has been done through

James C. Younglove

a sales agency. Mr. Younglove was born on August 7, 1879, at Crescent, Saratoga County, N. Y., and attended Armour Institute of Technology at Chicago. After spending several years with the National Lead Company, he joined with J. E. Meek in organizing the railroad department of the Johns-Manville Corporation, with which company he has been identified for nearly 30 years. For a period of several years he was a director of the company. Mr. Younglove's appointment became effective on November 1.

A. W. Thompson, vice-president and Pacific Coast manager in charge of sales of **Fairbanks Morse & Co.,** with headquarters at San Francisco, Cal., has been elected vice-president in charge of manufacturing with headquarters at Beloit,

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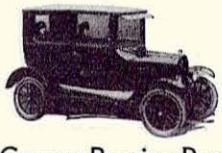
the verdict of

31 Years

1900 and—Open Hearth Steel

1910 and—Pure Iron



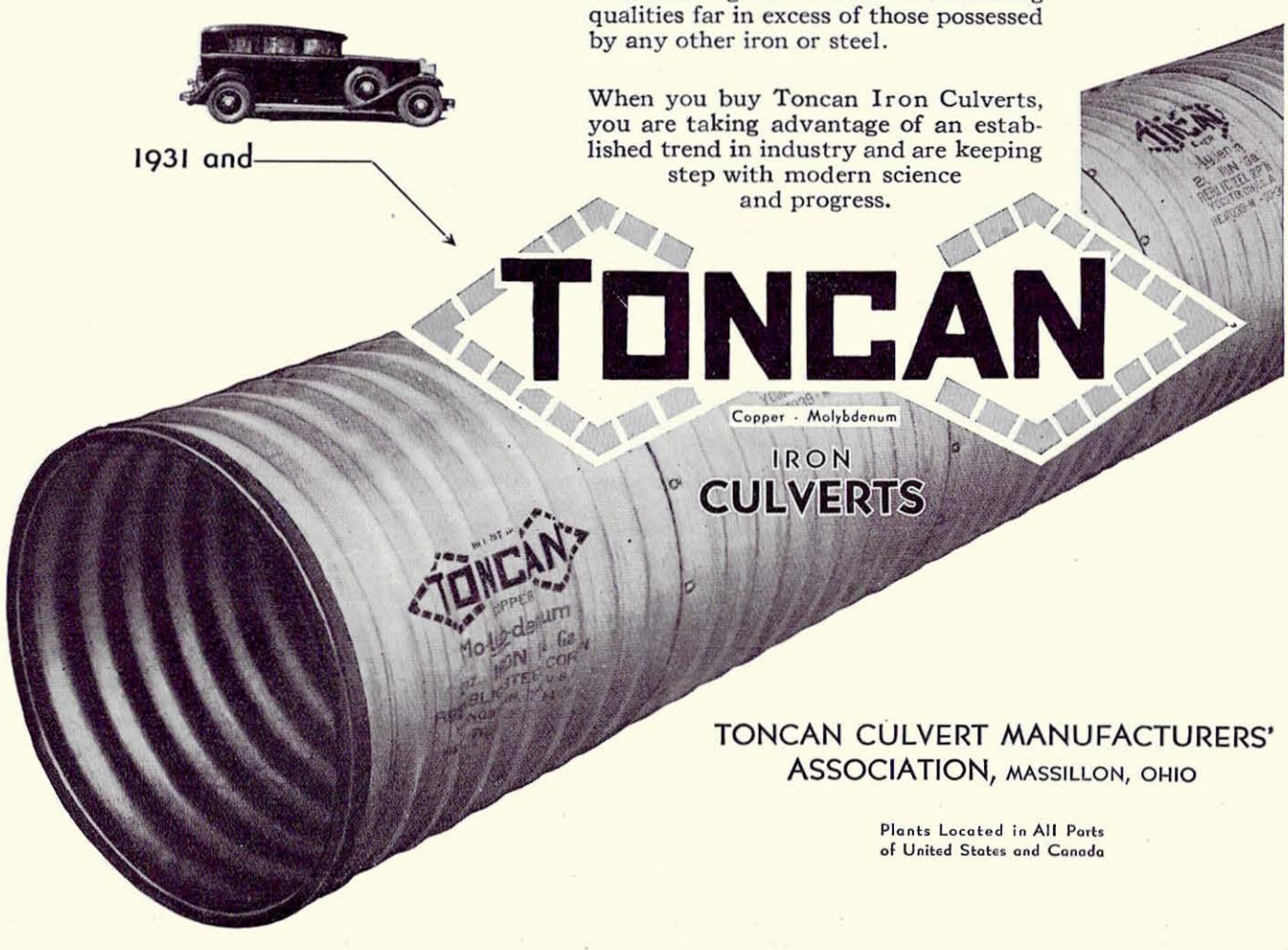
1920—Copper Bearing Pure Iron

1931 and

Look back to the automobiles and locomotives of 1900, 1910 and 1920. Think how alloys have influenced their development. Through their use heavier loads are carried, longer runs made and greater speeds attained.

Metallurgical advancement has likewise contributed to the improvement of Toncan Culverts. In 1908 Toncan was of commercially pure iron analysis without alloys. In 1921 a small content of copper was added, this greatly improving its service life. In 1924 a copper content practically double that of any other iron or steel was added, plus an additional element,—Molybdenum! It was found that the combination of these two metals, skillfully alloyed to the pure iron, developed a composition and grain structure which gave Toncan rust resisting qualities far in excess of those possessed by any other iron or steel.

When you buy Toncan Iron Culverts, you are taking advantage of an established trend in industry and are keeping step with modern science and progress.



TONCAN CULVERT MANUFACTURERS' ASSOCIATION, MASSILLON, OHIO

Plants Located in All Parts of United States and Canada

Wis., to succeeed **W. B. Heath,** resigned. Mr. Thompson graduated from Rennselaer Polytechnic Institute in 1907 and upon his graduation, became associated

A. W. Thompson

with the George A. Just Company, New York, and later with Westinghouse, Church, Kerr & Co., where he engaged in engineering and sales work. In 1910 he entered the employ of the General Electric Company, where he served for 10 years and was in charge of the design and development of the Erie Works of that company. In 1920 he joined the Fairbanks-Morse organization as general manager of the Indianapolis plant and in 1926, was transferred to San Francisco as Pacific Coast manager in charge of sales. In 1928 he was also made a vice-president and continued as such until November 1, 1931, when his jurisdiction was transferred to manufacturing.

W. J. Wignall, who has been appointed director of railroad sales for the **A. M. Byers Company,** with headquarters at Pittsburgh, Pa., graduated from Armour Institute of Technology in 1920, his education having been interrupted in 1917 when he enlisted in the United States

W. J. Wignall

Army and served overseas in the 127th Engineers until August, 1919. Upon graduation, he became resident engineer in charge of construction for G. L. Clausen, consulting engineer, which position he held until 1922. From the latter date until 1925, he was in the employ of the National Boiler Washing Company, holding positions of construction foreman, assistant to the vice-president in charge of purchases and sales engineer. In 1925, he joined the Locomotive Terminal Improvement Company, serving as sales engineer and later as vice-president, in which capacity he recently resigned. During part of this period, he also held the position of vice-president and director of Railway Hydraulic Systems, Inc.

OBITUARY

C. Hastings, retired vice-president of the Locomotive Finished Material Company, Atchison, Kan., died on November 17.

A. H. Darker, chief electrical engineer for J. Stone & Company, Ltd., London, England, died on November 15, at Brisbane, Australia, where he was visiting. During his career of over 30 years with this company Mr. Darker has made many trips around the world in connection with the Stone system of car lighting.

TRADE PUBLICATION

HOISTING AND CONVEYING EQUIPMENT.—The Wright Manufacturing Company, Bridgeport, Conn., has issued a 16-page condensed catalogue, 4½ in. by 10½ in., describing and illustrating, with parts and price lists, its line of hoisting and conveying equipment, including hand and electrically-operated hoists, trolleys, jib and traveling cranes and sling chains.

THE NATIONAL OF MEXICO, in order to promote safety among employees and improve train operations, is organizing safety committees and sub-conmittees on all divisions. The committees are formed by superintendents or assistants and representatives from the different unions, while meetings are being held monthly to discuss means and ways to protect human life and to avoid causes of accidents.

GENERAL W. W. ATTERBURY, president of the Pennsylvania, in a circular to employees, calls their attention to the importance of active co-operation with all local committees dealing with the relief of the unemployed, urging every employee who is able, not only to make such contributions of money as he can afford, but also to join in whole-hearted co-operation in the work of relief. Large numbers of Pennsylvania employees have been furloughed and many others are working only part time and these, of course, should receive first attention, the circular said. The Women's Aid, the well-known organization of wives and daughters of officers and employees, and women employees, is actively engaged in this work and already in 1931 has spent over $200,000 of its own money; and the directors of the railroad company have appropriated $100,000 for the use of the Women's Aid.

Construction

ERIE.—The Public Service Commission of New York has ordered the elimination of the Sheridan Drive grade crossing of the Erie, located about 3½ miles south of North Tonawanda station, Tonawanda, N. Y. Elimination will be accomplished by carrying the highway under the tracks of the Erie, and also under those of the International Railway, which crosses the Drive at the same point and which will share in the cost of the project.

ILLINOIS TERMINAL.—A contract has been awarded to Merker & Company, St. Louis, Mo., for the construction of the foundations and footings for this road's new 10-story and basement office building and passenger station, which is under construction on the northeast corner of Twelfth street and Washington avenue, St. Louis. The cost of this portion of the work is estimated to be about $50,000. It is expected that the contract for the construction of the superstructure of the building will be awarded in about a month.

NEW YORK CENTRAL.—The New York Public Service Commission has directed the elimination, by elevating the highway and carrying it over the railroad, of the Sissons crossing of this company's line, located on the Potsdam-Norwood county highway, two miles north of Potsdam station, Potsdam, N. Y.

NEW YORK, NEW HAVEN & HARTFORD.—The Carroll and Main street crossings of this company's tracks, both located south of Hopewell Junction station, East Fishkill, N. Y., have been designated for elimination by the Public Service Commission of New York. Carroll street is to be closed across the railroad, while at Main street a highway overcrossing will be constructed, at an estimated cost of $125,800.

PENNSYLVANIA-NEW YORK, CHICAGO & ST. LOUIS.—The Public Service Commission of New York has directed the elimination of the grade crossings of these two railroads at Brigham road, Central avenue and Washington avenue, all in Dunkirk, N. Y. The first two crossings will be eliminated by elevating the tracks and constructing highway subways underneath, while the Washington avenue crossing will be closed and traffic diverted to other streets. The cost of the entire project is estimated at about $700,000, the railroads' half of which will be divided equally between the two companies. The N. Y. C. & St. L. has been directed to prepare plans, specifications and estimates, and to carry out all of the work. The commission has also closed, for the present, proceedings for the elimination of 15 other grade crossings of these two roads, and of the New York Central, in the city of Dunkirk, but will reconsider them in the future, and provide for their elimination in one, two or three stages.

TEXAS & PACIFIC.—This company has signed an agreement with the city of Fort Worth, Tex., for the elimination of three street crossings in that city, by the con-

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TO ECONOMIZE-MODERNIZE

RIGHT NOW offers an excellent opportunity for railroad men in general to ask themselves a few questions—

We have a few in mind that we think quite pertinent—for instance—

As the railroad business gets more and more competitive, should not the item, gain in net revenue, become more and more important when making capital expenditures?

How much of the capital expenditures made by our railroads during the past five years has contributed toward a gain in net revenue?

Was the gain, if any, in each case, commensurate with the amount expended?

Of all the items bought by a railroad, are there many, if any, that offer greater opportunity for better service at lower costs than modern locomotives?

And right in line with this last question, is it not a fact that practically all railroads today are using the best locomotives they own?

Why?

When business picks up and some of the older freight engines, with their insufficient capacity for high speed, are sent out ahead of the present day modern freight engine, what is going to happen?

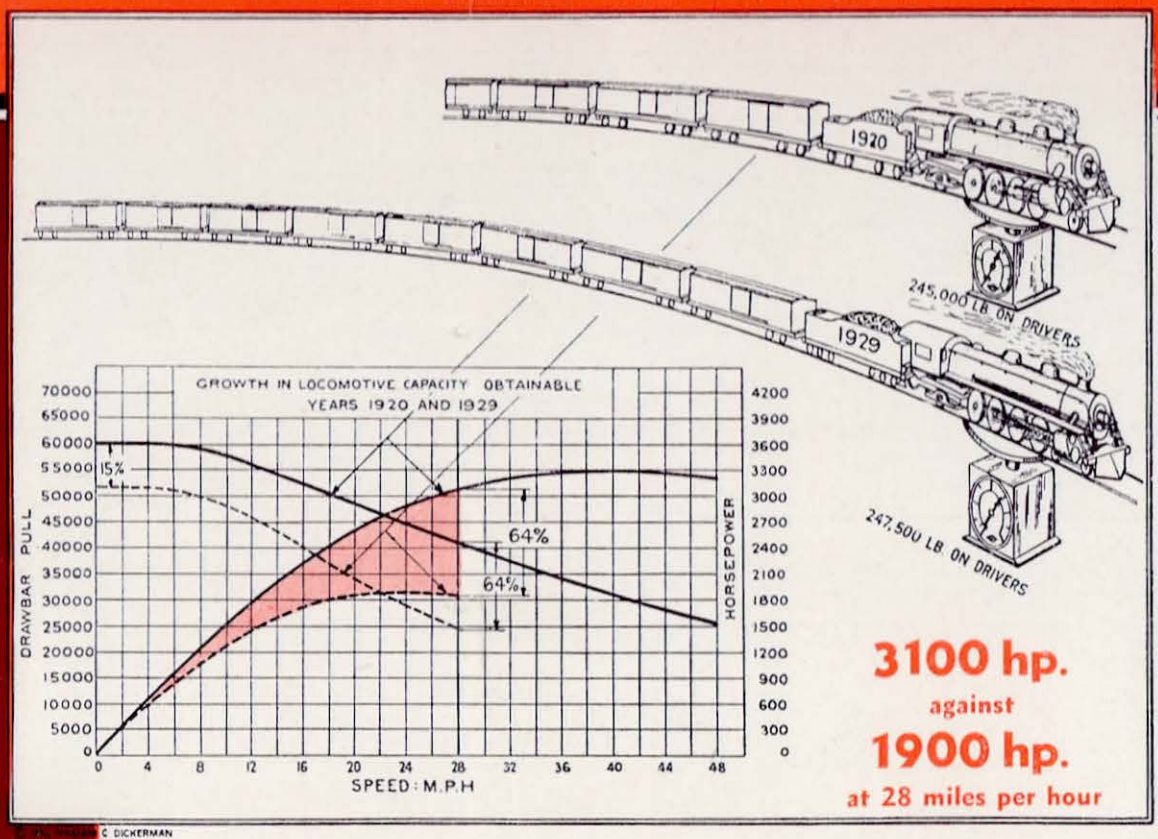
And will net earnings under such conditions pick up anywhere commensurate with the pick up in gross earnings?

And if not, why not?

We believe that in the answers to the above questions, and in a study of the following charts, there is much food for thought.

Alco

FASTER FREIGHT SCHEDULES WITH HEAVIER TRAINS



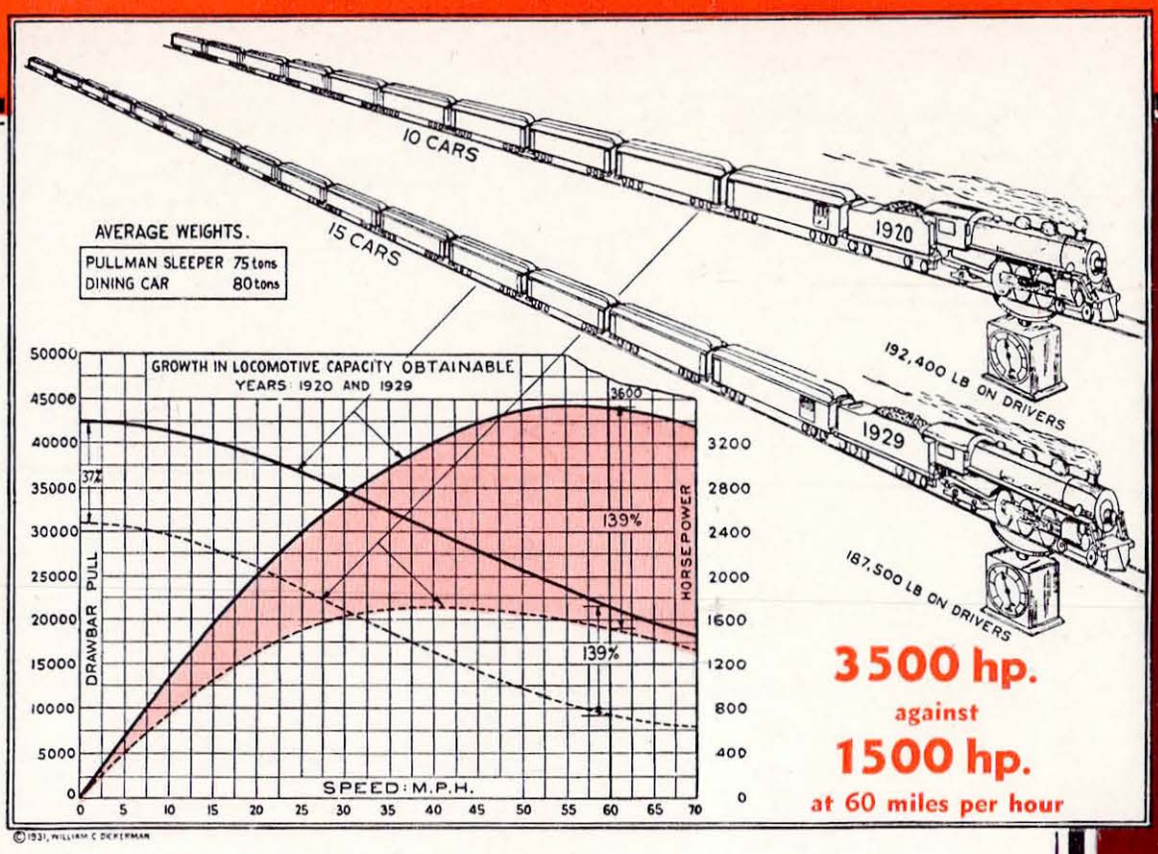
COMPARE the locomotive of 1920 with that of 1929, both on the same railroad and in the same heavy duty freight service. The earlier locomotive had a weight on drivers of 245,000 lb. It developed a drawbar pull at starting of 52,000 lb. *(See dotted curves in above chart.)* At 28 miles an hour, which is a good average operating speed for freight service today, the engine developed a drawbar pull of 25,000 lb. with an output of 1,900 hp.

The locomotive of 1929, with about one per cent more weight on drivers, develops a drawbar pull at starting of 60,000 lb. or a 15 per cent increase over the earlier locomotive. *(See solid curves in above chart.)*. At 28 miles an hour, however, the 1929 locomotive demonstrates its great superiority. It develops a drawbar pull of 41,000 lb. or 64 per cent more, at that speed, than the earlier locomotive.

This big increase is highly significant because it is the drawbar pull at usual operating speeds, which is the true measure of locomotive performance, so far as capacity is concerned. The greater drawbar pull throughout the operating range of speed from 20 to 40 miles per hour enables the modern locomotive to haul much heavier freight trains on faster operating schedules.

Alco

More Pullmans At No Sacrifice In Speed ▲ ▲ ▲ ▲



©1931, WILLIAM C DICKERMAN

IN SIMILAR manner, compare the performance of the 1920 and 1929 passenger locomotives. The dotted curves and the solid curves represent the important operating characteristics of the 1920 and 1929 locomotives respectively in actual passenger service.

The 1929 locomotive has nearly 5,000 lb. less weight on drivers than the 1920 locomotive. Yet, despite this lighter weight, progressive refinements in design and greater sustained capacity have made it possible for the new locomotive to develop 37 per cent more drawbar pull at starting, and 139 per cent more drawbar pull at passenger express speed of 60 miles per hour.

This big increase in drawbar pull has permitted important changes in passenger train movements which have resulted in substantial reductions in operating costs.

The 1929 locomotive now hauls fifteen Pullmans at the same rate of speed instead of the ten previously hauled by the earlier locomotive. If offered, it can haul more than fifteen Pullmans, on the particular runs for which it was built. The longer trains reduce the number of sections on limited trains during times of heavy traffic. Fewer diners are necessary. Every time two trains are combined into one, costs are reduced, track capacity is increased, and the headway between trains increased.

Alco

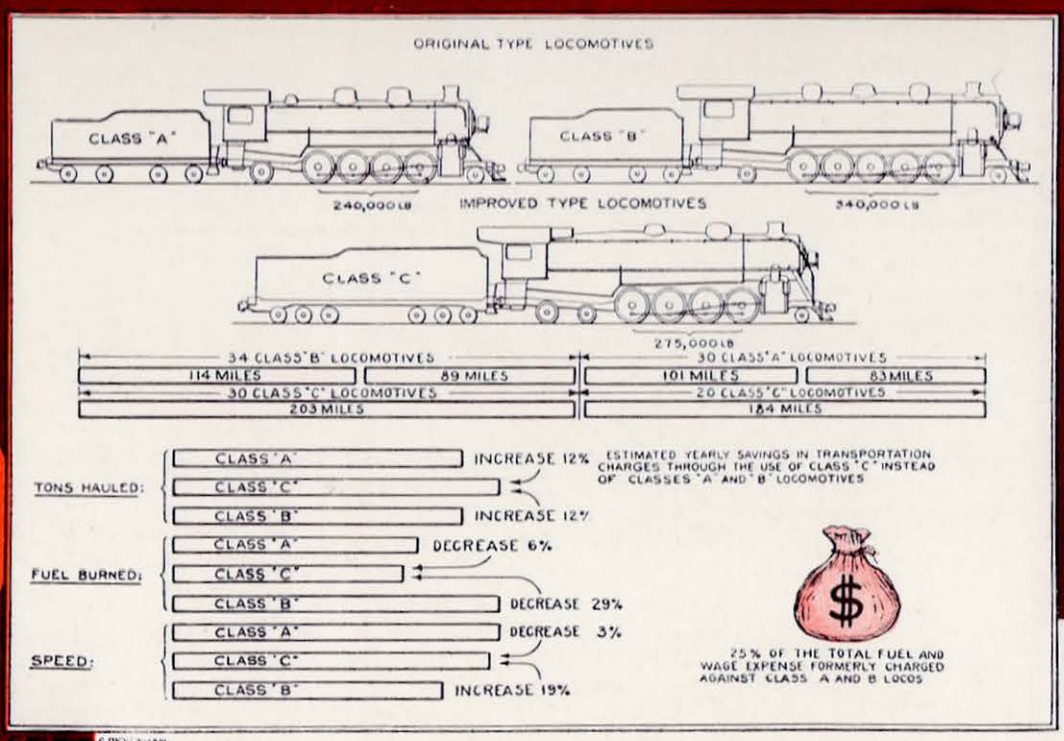
25% SAVING

LONGER RUNS

LOWER FUEL COSTS

HIGHER SPEEDS

MORE CARS PER TRAIN



IN TRANSPORTATION EXPENSE

THIS chart represents a typical example of what has been accomplished in dollars and cents savings through the replacement of older equipment by modern and highly efficient motive power.

The facts were these: 30 locomotives, designated as Class "A," were in freight service on divisions of 101 and 83 miles respectively; 34 locomotives, designated as Class "B," were in service on adjacent divisions of 114 and 89 miles respectively. The problem was to design a locomotive which would handle no less tonnage, on faster schedules and over the two divisions combined namely: 184 and 203 miles, with a performance that would yield sufficient return on the new investment to warrant the replacement of the 64 older locomotives.

The design developed was such, that 50 new locomotives, designated as Class "C," with greater power, higher speeds, longer runs and reduced fuel consumption, more than fulfilled all the requirements. They actually saved 25 per cent in transportation costs.

Put them to work on your road. A 25 per cent saving is big any day — and very important today. Investigate — Modernize — The profits now lost will pay the cost.

Alco

American Locomotive Company

30 Church Street New York N.Y.

struction of reinforced concrete viaducts. These grade separations will be made at Ballinger street, Summitt avenue and West Daggett avenue. The total length of these structures, including the approaches, will be approximately 637 ft., 544 ft. and 935 ft., respectively. Each of the structures will be provided with pedestrian sidewalks. It is expected that the construction of these viaducts will be commenced early in 1932.

Financial

ATCHISON, TOPEKA & SANTA FE.—*Abandonment.*—The Interstate Commerce Commission has authorized this company to abandon a line extending from Shelton Junction, Colo., southwesterly 2.5 miles. The line originally extended 16 miles, but operation over the major part of it was discontinued in 1910, when a bridge was washed out and prospective traffic did not justify the expense of its renewal.

BALTIMORE & OHIO.—*Annual Meeting.*—At the annual meeting of the stockholders of this company held in Baltimore on November 16, forty persons were in attendance representing 20,311 stockholders. Howard Bruce of Baltimore was elected a director to fill the vacancy occasioned by the death of Delos W. Cooke. Other directors were re-elected.

BALTIMORE & OHIO.—*Acquisition.*—The Interstate Commerce Commission has assigned for hearing a petition filed by the Kansas & Sidell, the Casey & Kansas and the Yale Short Line, short lines connecting with the line of the old Chicago & Alton, for the purpose of receiving evidence on which the commission may make findings as to the acquisition of the properties by the Baltimore & Ohio at their commercial value or its operation of the properties.

BROOKLYN EASTERN DISTRICT TERMINAL.—*Tentative Recapture Report.*—Division 1 of the Interstate Commerce Commission has issued a tentative recapture report finding that this company had a net railway operating income in excess of 6 per cent on the tentative value of its property for the years 1920 to 1927 amounting to $1,178,291. This is based on a tentative finding that the value for rate-making purposes was $5,175,000 for 1927.

CHICAGO & NORTH WESTERN.—*Omits All Dividends.*—The directors of this company have omitted the regular $3.50 semi-annual dividend on its preferred stock and the $2 on its common. Dividends have been paid without interruption on both stocks since 1877.

CHICAGO, ROCK ISLAND & PACIFIC.—*Trackage Rights.*—The Interstate Commerce Commission has authorized this company to construct a short track connecting its line with that of the Davenport, Rock Island & Northwestern at Shaffton, Ia., and the operation by it under trackage rights over the D. R. I. & N. W. from that point to Chancy, 7.8 miles. The Rock Island has been authorized to abandon its 8-mile line between these two points.

CHICAGO, ST. PAUL, MINNEAPOLIS & OMAHA.—*Equipment Trust.*—This company has applied to the Interstate Commerce Commission for authority for an issue of $240,000 of 4¾ per cent equipment trust certificates.

CINCINNATI, NEW ORLEANS & TEXAS PACIFIC.—*Extra Dividend.*—This company has declared an extra dividend of $3 on its common stock in addition to the regular semi-annual dividend of $4 on this stock and the regular quarterly preferred dividend of $1.25. The company paid an extra dividend of $50 in 1930 and another of $3 in 1929. The C. N. O. & T. P. is controlled by the Southwest Construction Company, which in turn is owned jointly by the Alabama Great Southern, the Southern and the Baltimore & Ohio.

CINCINNATI UNION TERMINAL.—*Bonds.*—J. P. Morgan & Co., the First National Bank, Kuhn, Loeb & Co., and the National City Company are offering, subject to the approval of the Interstate Commerce Commission, $12,000,000 of first mortgage, series B, 5 per cent bonds of this company, maturing in 2020. The issue, which is guaranteed by the B. & O., the C. & O., the C. N. O. & T. P., the C. C. C. & St. L., the L. & N., the N. & W. and the P. R. R., is priced at 97½ to yield 5⅛ per cent.

DETROIT, TOLEDO & IRONTON.—*Acquisition of D. & I. and Toledo-Detroit.*—The Interstate Commerce Commission has authorized this company to acquire the Detroit & Ironton and the Toledo-Detroit and to issue $18,336,000 of common stock and $10,701,000 of first and refunding mortgage series A bonds for a readjustment of the financial structure as a result of the acquisition. The companies involved are controlled by stock ownership by the Pennroad Corporation.

FONDA, JOHNSTOWN & GLOVERSVILLE.—*Notes.*—This company has applied to the Interstate Commerce Commission for authority to issue 60 notes for a total of $100,000, to be paid monthly, to the J. G. Brill Company, in connection with the purchase of five high-speed passenger motor cars costing $125,000, which it proposes to operate between Gloversville, N. Y., and Schenectady, in place of its interurban electric service. The motor cars are to be used to provide a faster service and buses are also to be operated between points at which the high-speed cars will not stop.

GEORGIA, FLORIDA & ALABAMA.—*Receivers Named.*—This company, the property of which is leased to the Seaboard Air Line, has been placed in receivership by the federal court at Atlanta. The receivers are Philip Weltner of Atlanta and Leon S. Freeman of New York.

LEHIGH VALLEY.—*Bonds.*—This company has applied to the Interstate Commerce Commission for authority to pledge $10,000,000 of general consolidated mortgage 5 per cent bonds as collateral for short-term notes. Half of the bonds are to be delivered to J. P. Morgan & Co., and half to the First National Bank of New York to secure loans of $3,000,000 each.

NEW YORK CENTRAL.—*Abandonment.*—This company, the Michigan Central and the Detroit, Toledo & Milwaukee have applied to the Interstate Commerce Commission for authority to abandon the line of the latter from Emmet, Mich., to Dundee, 88 miles.

SOUTHERN PACIFIC.—*Reduces Dividend.*—Directors of this company have reduced the dividend rate on its common stock from $6 per annum to $4. The former rate had been maintained since 1907.

SOUTHERN PACIFIC.—*Argument on Acquisition of St. L. S. W.*—Oral arguments were heard by the Interstate Commerce Commission on November 13 and 14 on this company's application for authority to acquire control of the St. Louis Southwestern, which the commission had allocated in its consolidation plan to the Illinois Central system. Counsel for the S. P. and the Cotton Belt said that the latter is threatened with receivership unless the S. P. is allowed to go through with its application and that it cannot succeed as an independent property because it is surrounded by systems formed and in process of being formed under the consolidation program. Examiner Thomas F. Sullivan, in a proposed report, had recommended denial of the application on the ground that the acquisition would be contrary to fundamental principles of the commission's plan and also that the prices paid and to be paid for the Cotton Belt stock were too high. Ben C. Dey, general counsel of the Southern Pacific, said that the price was not too high at the time the stock was bought and that, averaging all the purchases, the price to the Southern Pacific would be reduced to $90.60 for the preferred and $53.40 for the common. It was asserted that unifications of other roads in the Southwest had closed what had been friendly connections with the Cotton Belt which had greatly reduced its earnings and that the Southern Pacific was seeking to protect its investment in the Texas and Louisiana lines by maintaining friendly connections to the North. Arguments in opposition to the application were made by other southwestern railroads.

TEXAS & NEW ORLEANS.—*Operation at New Orleans.*—This company and Morgan's Louisiana & Texas have applied to the Interstate Commerce Commission for authority to change the method of terminal operation at New Orleans and route traffic over the bridge across the Mississippi river to be constructed by the State of Louisiana and the city of New Orleans and to abandon their car ferry operation.

WEST VIRGINIA MIDLAND.—*Abandonment of Operation.*—The Interstate Commerce Commission has authorized this company to abandon operation as to inter-

state and foreign commerce of its entire line of railroad extending from Holly Junction, W. Va., to Diana, 16.9 miles.

Dividends Declared

Alabama Great Southern.—Common, $2.00, semi-annually, payable December 30 to holders of record November 30; Preferred, $2.00, semi-annually, payable February 13 to holders of record January 8.

Catawissa Railroad.—First and Second Preferred, $1.15, payable November 23 to holders of record November 12.

Cincinnati, New Orleans & Texas Pacific.—Common, $4.00, semi-annually, Common Extra, $3.00; both payable December 26 to holders of record December 5; Preferred, $1.25, quarterly, payable December 1 to holders of record November 21.

Union Pacific.—Common, 2½ per cent, quarterly, payable January 2 to holders of record December 1.

Wheeling & Lake Erie.—7 Per Cent Prior Lien, accumulated, $7.00, payable November 19 to holders of record November 17.

Average Prices of Stocks and of Bonds

	Nov. 17	Last week	Last year
Average price of 20 representative railway stocks..	43.42	49.14	91.94
Average price of 20 representative railway bonds..	76.85	78.56	93.34

Railway Officers

EXECUTIVE

Elsey Elected President of U. P. to Succeed Adams

Charles Elsey, executive vice-president of the Western Pacific, has been elected president, to succeed Harry M. Adams, who has resigned, effective December 31. Mr. Elsey will have headquarters as before at San Francisco, Cal.

C. C. Cameron, who has been elected vice-president in charge of traffic of the Illinois Central, as noted in the *Railway Age* for November 14, has been identified with railway traffic work since he was 13 years of age. He was born on August 14, 1869, at St. Louis, Mo., and entered railway service in 1882 as a messenger boy in the freight department of the Wabash at St. Louis. Ten years later, Mr. Cameron left this road to enter the service of the Illinois Central and has served that road continuously to the present. After serving as a clerk in the general freight office at St. Louis for five years he was advanced to the position of chief clerk at the same point. In 1899 he was sent to Louisville, Ky., as assistant general freight agent, which position he held until 1903, when he was further advanced to general freight agent at the same point. Mr. Cameron was transferred to Memphis, Tenn., in 1905, and thence to Chicago in 1907, where two years later he was appointed coal traffic manager. He was reappointed general freight agent at Chicago in 1914, which position he held until 1925, when he was promoted to assistant freight traffic manager. On July 1, 1928, he was further advanced to freight traffic manager, and in June, 1931, he was appointed to the newly-created position of general traffic manager. Mr. Cameron's

C. C. Cameron

election as vice-president in charge of traffic will take effect on December 1.

D. W. Longstreet, whose retirement as vice-president in charge of traffic of the Illinois Central was noted in the November 14 issue of the *Railway Age*, has served in the traffic department of the Illinois Central throughout his entire railway career of 44 years. He was born on November 23, 1861, near Coffeeville, Miss., and was educated at Washington and Lee University and at the University of Mississippi. He entered railway service in 1887, as a clerk in the local freight office of the Illinois Central at Holly Springs, Miss. After several years at this point and in various clerical positions in the local and general freight offices at New Orleans, La., Mr. Longstreet was appointed chief clerk in the general freight office at Louisville, Ky. In 1903 he was advanced to assistant general freight agent at the same point, being further promoted to general freight agent at Louisville in 1905. Two years later, Mr. Longstreet was transferred to Memphis, Tenn., where he remained

D. W. Longstreet

until 1911, when he was sent to Chicago as freight traffic manager. Nine years later he was advanced to traffic manager at the same point, which position he was holding in 1928 when he was elected vice-president in charge of traffic, with headquarters still at Chicago. Mr. Longstreet's retirement will become effective on December 1.

F. H. Law, who has been appointed assistant to the vice-president in charge of traffic of the Illinois Central, as noted in the *Railway Age* for November 14, has been in the service of the traffic department of this road since 1897. He was born on November 10, 1876, at Sheridan, Ill., and, after a public school education, entered the service of the Illinois Central, where he served in various positions until October, 1909, when he was appointed commercial agent at Pittsburgh, Pa. In February, 1912, Mr. Law was advanced to assistant general freight agent at Memphis, Tenn. A year later he was transferred to St. Louis, Mo., and in February, 1918, he was again transferred, to Chicago. In June, 1925, Mr. Law was promoted to general freight agent at Chicago, in which position he served until July, 1928, when he was advanced to assistant freight traffic manager. In June, 1931, he was again promoted to assistant traffic manager at Chicago, which position he held until his recent appointment as assistant to the vice-president in charge of traffic, with headquarters still at Chicago, which will become effective on December 1.

F. H. Law

FINANCIAL, LEGAL AND ACCOUNTING

John K. Lovell has been appointed general freight claim agent of the New York Central, and **W. F. Cunningham** has been appointed assistant general freight claim agent. Both will have headquarters at New York.

OPERATING

J. E. Blackaller has been appointed superintendent of barge and ferry service on the Canadian National, at Vancouver, B. C., to succeeed **J. Y. Rochester,** who has retired.

Continued on Next Left Hand Page

BETTER FIRES

FIREBAR CORPORATION
CLEVELAND OHIO.

A. B. Cuthbert, assistant to the general superintendent of the Western Pennsylvania division of the Pennsylvania, with headquarters at Cresson, Pa., has retired from active service, and the position of assistant to the general superintendent at Cresson has been discontinued.

C. W. Spruell has been appointed trainmaster of the Arkansas division of the Missouri Pacific, with headquarters at Little Rock, Ark., to succeed **E. M. Bishop,** who has been transferred to the Joplin division, with headquarters at Nevada, Mo., where he succeeeds **J. A. Greig.**

TRAFFIC

W. L. Reeves, whose appointment as assistant to the freight traffic manager of the Illinois Central was noted in the *Railway Age* for November 14, has served this road in various departments for 29 years. He was born on December 25, 1884, at Trenton, Ky., and was educated in the public schools at that point. He entered the service of the Illinois Central in 1902, as a clerk in the freight office at Louisville, Ky. Subsequently he was appointed telegraph

W. L. Reeves

operator at the same point and then station accountant, being sent to Memphis, Tenn., in 1906, as a rate clerk. After a time Mr. Reeves was advanced to chief clerk and, on April 1, 1920, he was further promoted to assistant general freight agent at the same point. On September 1, 1930, he was transferred to Chicago, where he was located at the time of his promotion to assistant to the freight traffic manager, which will become effective on December 1.

B. S. Merritt, whose appointment as general freight agent for the Great Northern, at San Francisco, Cal., was noted in the *Railway Age* for October 31, has been connected with the traffic department of the Great Northern for about 25 years. He was born on January 26, 1876, at Port Huron, Mich., and after a public school education entered railway service on April 12, 1893, as an agent and telegrapher for the Flint & Pere Marquette (now part of the Pere Marquette). He served in this position and as a yardmaster until 1906, when he went with the Great Northern as an agent and general yardmaster. Subsequently, Mr. Merritt was promoted to local freight agent, in which position he served at Great Falls, Mont., and St. Paul, Minn. Later he was advanced to the positions of traveling freight agent, general agent and assistant general freight agent. He was holding the latter position, with headquarters at Seattle, Wash., at the time of his recent promotion to general freight agent.

ENGINEERING AND SIGNALING

As announced in the *Railway Age* of November 7, **George F. Blackie,** assistant chief engineer of the Nashville, Chattanooga & St. Louis, has been promoted to chief engineer, with headquarters as before at Nashville, Tenn., to succeed **Hunter McDonald,** retired, and **C. H. Johnson,** senior assistant engineer, has been promoted to assistant chief engineer, with headquarters at Nashville, to succeed Mr. Blackie.

Mr. Blackie has been associated with the N. C. & St. L. almost continuously since 1886. He was born on December 22, 1869, at Nashville, Tenn., and was educated at Montgomery Bell Academy, Nashville, and at Vanderbilt University. He entered the service of the N. C. & St. L. on November 24, 1886, and served as rodman and chainman until 1888, when he left to enter Vanderbilt University. A year later he returned to the service of this road as a maintenance of way clerk and draftsman in the chief engineer's office. In December, 1892, he was promoted to assistant engineer, which position he held until July, 1899, when he left railway service to become

George F. Blackie

superintendent of the American Phosphate Company and served in this position and as engineer of the Mt. Pleasant Southern Railroad, Mt. Pleasant, Tenn., until February, 1901. On that date he returned to the N. C. & St. L. as an assistant engineer, being promoted to engineer of roadway and track in 1914. He was promoted to assistant chief engineer in December, 1916, which position he held continuously until his recent promotion to chief engineer, effective November 1.

With the exception of about a year, when he was on a hydro-electric development project, Mr. Johnson has been with the N. C. & St. L. continuously since 1900. He was born on August 30, 1877, at Nashville, and received his education also at Montgomery Bell Academy and at Vanderbilt University. He worked for a time as rodman and instrumentman on the improvement of the Cumberland river, and then entered railway service in March, 1900, as a rodman on construction work with the N. C. & St. L. He served successively as transitman, resident engineer and chief of party until August, 1903, when he was transferred to maintenance work, being made engineer of construction in charge of double track work in 1910. On March 1, 1916, he left this road to take up contracting work as field superintendent on the construction of a dam for a hydro-electric development project on the Caney Fork river. He returned to the service of the N. C. & St. L. in October, 1917, as acting di-

C. H. Johnson

vision engineer and was promoted to engineer of construction on June 1, 1919. Although Mr. Johnson's title was changed to senior assistant engineer on May 1, 1920, he continued in charge of construction work until his recent promotion to assistant chief engineer, also effective November 1.

Hunter McDonald, who has retired as chief engineer of the Nashville, Chattanooga & St. Louis, had held this position for 39 years. He was born on June 12, 1860, at Winchester, Va., and studied engineering for a year at Washington & Lee University, Columbia, Tenn. He entered railway service in August, 1879, as an assistant engineer on the Louisville & Nashville, leaving this road in December of the same year to join the engineering staff of the Nashville, Chattanooga & St. Louis, where he was engaged in various capacities on location, construction and maintenance work for the next 10 years. In 1889, Mr. McDonald was appointed superintendent of

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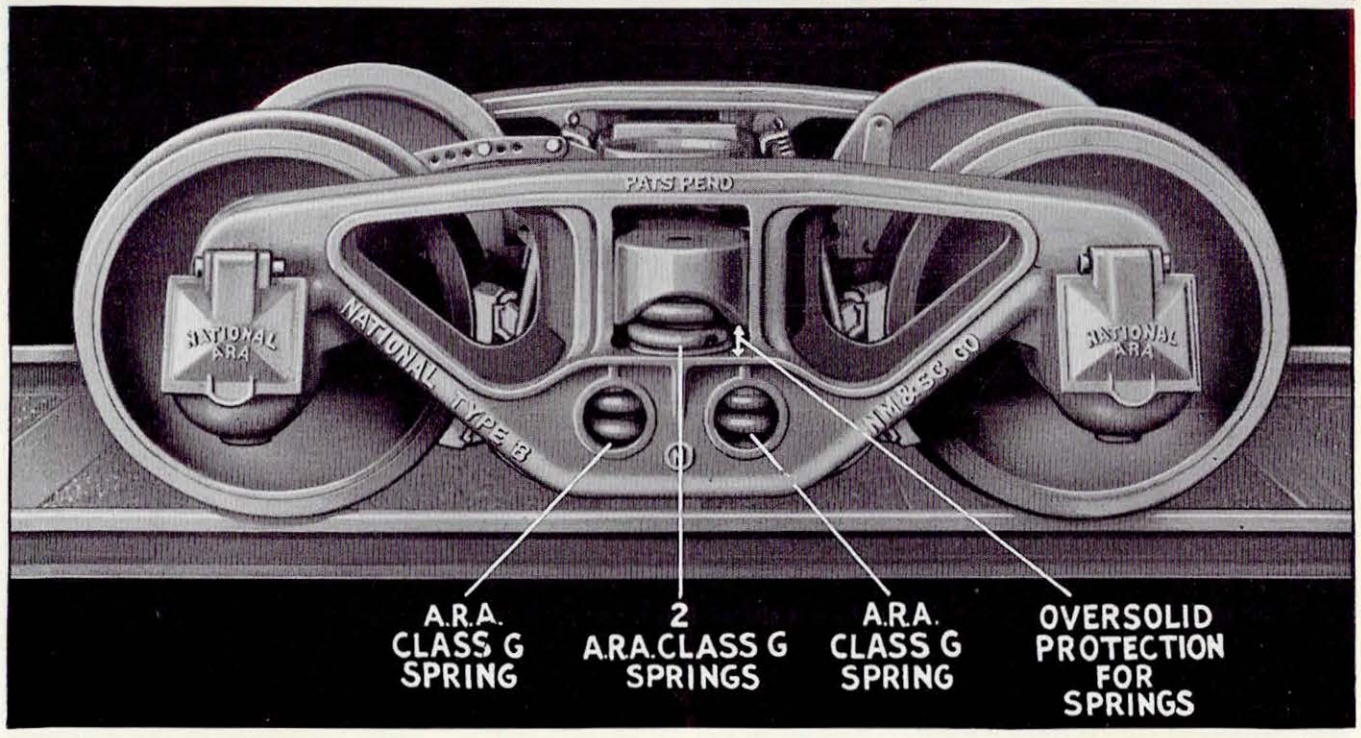
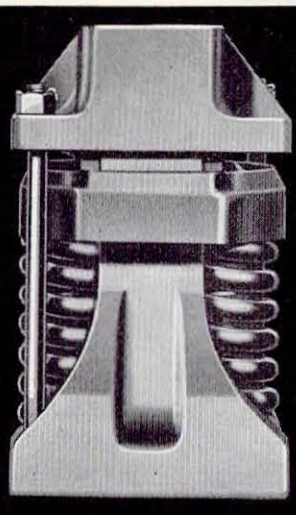
TRUCKS ››› that Speed Train Operation



INCREASED SPRING CAPACITY TO REDUCE DAMAGE CLAIMS



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Another contribution by National to profitable freight operation. This gear stands first in the combination of capacity, sturdiness and endurance.

NATIONAL Type B trucks insure smoother riding cars—protecting the lading from damage. ›› In the seventy-ton size, National Type B trucks have a spring capacity 42% above A.R.A. requirements. The travel of the springs is 18% in excess of these requirements and springs are protected from oversolid blows. The familiar Class G springs are used to obtain these advantages. Full details gladly furnished on request.

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the Huntsville, Fayetteville & Columbia division, which position he held until 1891, when he was appointed resident engineer of the Western Atlantic (now part of

Hunter McDonald

the N. C. & St. L.). In 1892, he was promoted to chief engineer of the N. C. & St. L., which position he held continuously until his retirement. From 1918 to 1920, during federal control of the railroads, Mr. McDonald was also chief engineer of the Tennessee Central and of the Birmingham & Northwestern (now part of the Gulf, Mobile & Northern). He took an active interest in the work of various engineering organizations, and was president of the American Railway Engineering Association in 1904-05, and of the American Society of Civil Engineers in 1914.

MECHANICAL

A. B. Wilson, assistant master mechanic of the Portland division of the Southern Pacific, Pacific Lines, with headquarters at Eugene, Ore., has been promoted to master mechanic of the same division, with headquarters at Portland, Ore., to succeed **C. L. Gibson,** who has retired.

W. F. Ackerman, superintendent of shops on the Chicago, Burlington & Quincy, Lines West, of the Missouri river, at Havelock, Neb., has been transferred to Lines East of the Missouri river, at West Burlington, Iowa, to succeed **H. C. Gugler,** who has been appointed master mechanic of the Galesburg and East Ottumwa divisions, with headquarters at Galesburg, Ill. Mr. Gugler succeeds **G. P. Trachta,** who has been transferred to the La Crosse division, with headquarters at North La Crosse, Wis., where he relieves **J. S. Ford,** who has been appointed assistant master mechanic of the Chicago and Aurora divisions, at Aurora, Ill. Mr. Ford succeeds **E. J. Cyr,** who has been assigned to other duties.

OBITUARY

F. A. Wilson, stationer of the Atchison, Topeka & Santa Fe, with headquarters at Topeka, Kan., died at that point on November 12, after a long illness.

E. F. Rummel, assistant general manager of the Chicago, Milwaukee, St. Paul & Pacific, Eastern lines, Chicago, died of heart disease on November 17 at Chicago.

Daniel T. McCabe, formerly vice-president in charge of traffic, western lines, of the Pennsylvania, died at Columbus, Ohio, on November 16. Mr. McCabe retired from the vice-presidency of the Pennsylvania in July, 1918, after 48 years of continuous service. He was born at Abingdon, Va., on November 25, 1849. He entered railway service in July, 1870, as clerk in the auditor's office of the Pittsburgh, Cincinnati & St. Louis (now part of the Pennsylvania), at Columbus, Ohio. He served with that road and its affiliated companies in the capacities of division freight agent, general freight agent, general western freight agent, assistant general freight agent and freight traffic manager. In January, 1907, Mr. McCabe was elected fourth vice-president of the Pennsylvania and of the Pittsburgh, Cincinnati, Chicago & St. Louis (Pennsylvania Lines—West of Pittsburgh), with jurisdiction over the freight and passenger traffic. In January, 1907, he was also appointed third vice-president of the Vandalia (now also a part of the Pennsylvania), and from February 1, 1914, to January 1, 1917, he was second vice-president of that company. From April 1, 1914, to January 1, 1918, he was also vice-president of the Grand Rapids & Indiana (now part of the Pennsylvania). Effective January 1, 1917, the P., C., C. & St. L., and the Vandalia, and directly controlled companies, were consolidated as the Pittsburgh, Cincinnati, Chicago & St. Louis, of which Mr. McCabe was made third vice-president (in charge of the freight and passenger departments). On January 1, 1918, the Pennsylvania having assumed direct control, management and operation of the companies, Mr. McCabe was appointed vice-president in charge of traffic of the Pennsylvania, western lines; he was also vice-president in charge of traffic of the Pittsburgh, Cincinnati, Chicago & St. Louis, the position he held until his retirement.

George F. P. Day, assistant chief engineer, in the Eighties, of the Fitchburg Railroad, now a part of the Boston & Maine, died in retirement at his home in San Diego, Cal., on November 1, at the age of 82. Mr. Day, who was born on February 26, 1849, at Fitchburg, Mass., entered railway service at the age of 15, taking up the work of his father, who operated stage coach lines between Boston and Fitchburg, prior to the construction of the Fitchburg Railroad. In 1864, upon the death of his father, who had been appointed local manager of the new railroad, Mr. Day entered the engineering department of the road, and, completing his engineering education outside of college, he was soon made assistant chief engineer of the road. In 1885 he resigned this position to go to California for the health of one of his sons. In 1890 he returned to Fitchburg, and, until his retirement about 23 years later, held a number of important municipal positions.

Columbus Haile Dies

Columbus Haile, president retired, and a member of the board of directors of the Missouri-Kansas-Texas, died on November 14, at St. Louis, Mo., from a pulmonary ailment. Mr. Haile's death closes a career of 51 years' service with the Katy, most of which has been in the traffic department. Mr. Haile was born at Carlowville, Ala., on September 8, 1867, and was educated at Hampden-Sydney College and at the University of Virginia. He entered railway service at Dallas, Tex., on October 1, 1880, and was appointed assistant general freight agent of the Missouri-Kansas-Texas at Sedalia, Mo., in 1889. From 1891 to 1896, he was general freight agent and from June, 1896, to May 15, 1897, a member of the board of administration of the Southwestern Traffic Association. He was made freight traffic manager in 1897, traffic manager in 1898 and from February, 1907, to September, 1915, was also vice-president.

When the railway went into receivership in the latter year, he became chief traffic officer and during federal operation of the railways, was traffic manager of both the Missouri, Kansas & Texas (now the Missouri-Kansas-Texas) and the St. Louis-San Francisco. He was made vice-president in charge of traffic when the Missouri-Kansas-Texas came out of receivership, which position he held until his election as president in December, 1926. He retired at his own request on October 7, 1930, and was designated by the board

Columbus Haile

as president retired. From that time until his death, he continued to serve as a member of the board and also acted in an advisory capacity.

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OPERATING ECONOMY

SUPER-PACKING will insure steam tight cylinders on super-power.

That HUNT-SPILLER *Duplex Sectional Packing* meets all the severe requirements is proved by its constantly increasing demand.

Many railroads in all sections of North America have discovered that the cylinders of modern power can be kept steam tight for a lower cost by the use of HUNT-SPILLER *Duplex Sectional Packing.*

Reports show a big increase in mileage—lower fuel consumption, and a reduction in round-house maintenance.

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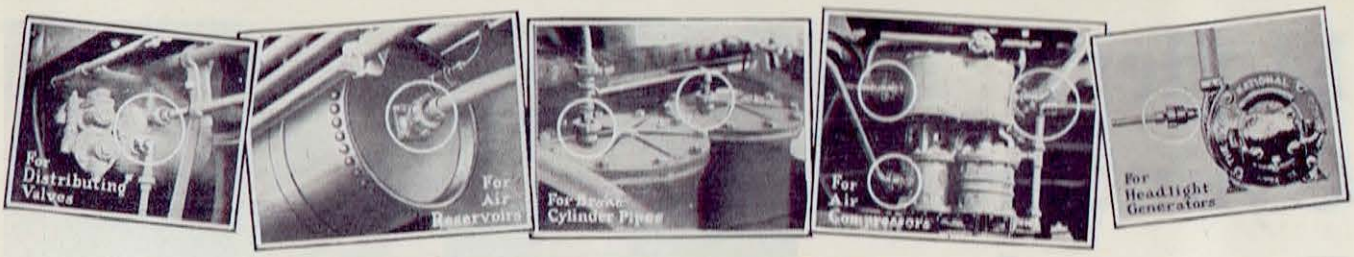
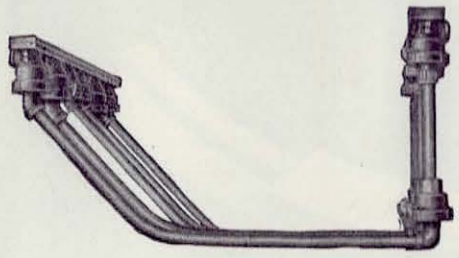
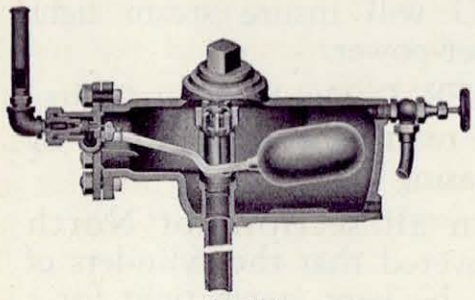


BARCO Flexible Joints in Locomotive Piping

Modern Power Must Have Modern Equipment To Insure Minimum Operating Costs

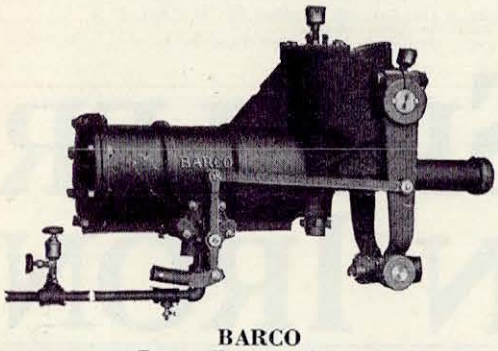


BARCO
Engine-Tender Connections



BARCO
Float Low Water Alarm

BARCO
Steam Heat Connections



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Power Reverse Gear

ECONOMIES effected due to improvement in design of modern locomotives have been contributed to largely by improvements in design by manufacturers of auxiliary devices.

BARCO devices are contributing their share to the increase in efficiency, lower fuel consumption and reduced maintenance costs.

BARCO Flexible Joints in locomotive piping, BARCO Metallic Engine Tender Connections for air and steam and BARCO all-metal Rear of Tender and Car Steam Heat Connections are daily eliminating failures formerly encountered and at the same time effecting substantial economy in maintenance cost.

The BARCO *Float* type Low Water Alarm guards against disastrous explosions and burned crown sheets caused by low water and saves the railroads thousands of dollars annually in reduced maintenance cost by eliminating the cause of running with high water.

The design and construction of the BARCO Power Reverse Gear permits close adjustment of cut-off and maintains this adjustment accurately thereby contributing to the efficiency of the operation of the locomotive and eliminates unnecessary wear on the reciprocating parts.

To get the most out of modern locomotives be sure they are BARCO equipped.

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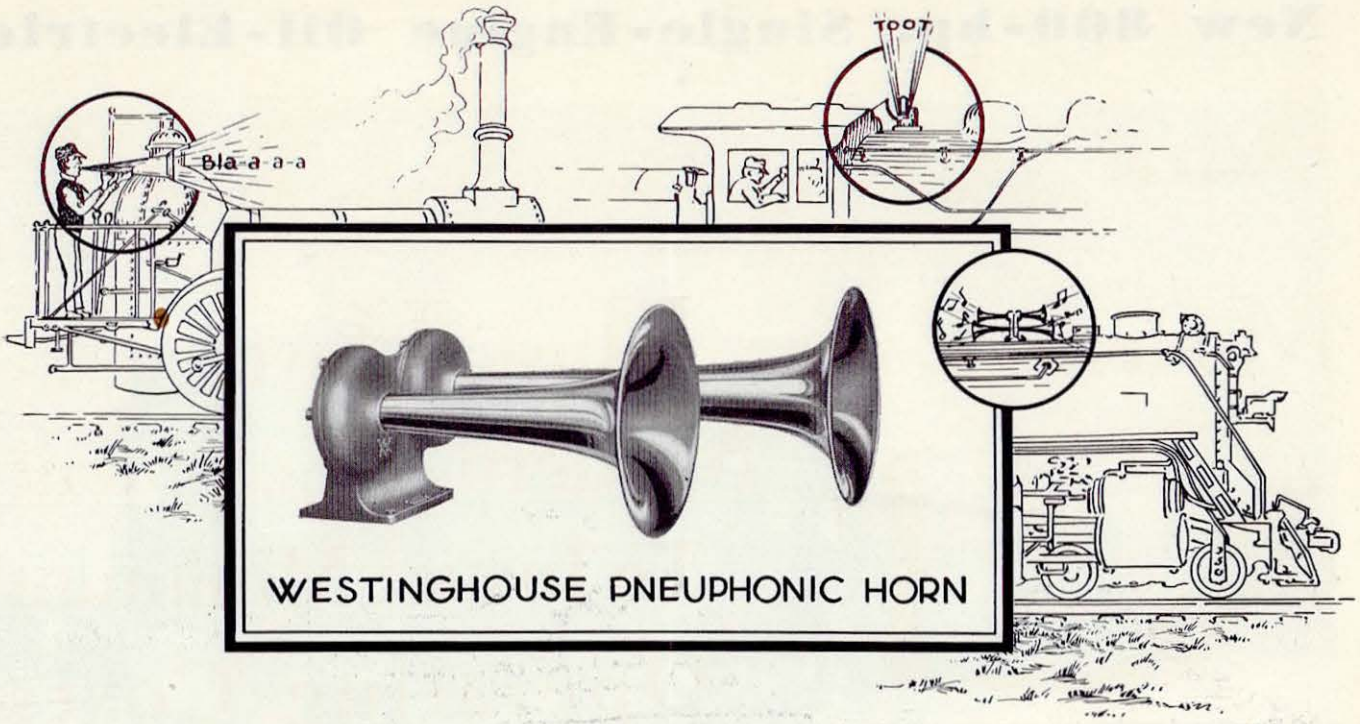

EVOLUTION OF THE LOCOMOTIVE ALARM SIGNAL

THE engineer had to blow his own horn in the "early days" to give warning of the train's approach to highway crossings . . . Obviously, the blare of a tin horn signal was inadequate because, to obtain the necessary volume and duration of sound taxed the lung capacity of even the most "husky" man.

The steam whistle has been more effective, but even it requires the expenditure of considerable power, and produces a tone that oftentimes is far from pleasing.

The "Pneuphonic" horn—compressed air operated—is an alarm signal of tremendous carrying power, costing for its operation but 1/8 that of the common steam whistle. Moreover, the usual discordant shriek is displaced by a far-reaching melodious chime . . . For effective, harmonious, and economical signals use the Westinghouse Pneuphonic Horn!

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1224

New 800-hp. Single-Engine Oil-Electric

G-E equipped 800-hp. oil-electric at Akron, Ohio

...the fifth G-E equipped oil-electric for the Erie Railroad

THE performance of four G-E equipped oil-electric locomotives on the lines of the Erie Railroad led to the recent installation of an 800-hp. single-engine oil-electric in switching service at Akron, Ohio.

The design of this new locomotive is in keeping with the trend to greater horsepower per unit. It combines increased economy with improved operation, and it extends the usefulness of oil-electrics without sacrificing their inherently high availability.

Ask your nearest G-E office for complete information.

The 800-hp. Oil-electric

Total Weight (operating)	230,000 lb.
Weight on drivers	230,000 lb.
Weight per Driving Axle	57,500 lb.
Tractive Effort (Continuous)	28,000 lb.
Tractive Effort (Starting)	69,000 lb.
Maximum Speed	40 mph.

One of two G-E equipped 600-hp. oil-electrics in service at Akron, Ohio. The Erie Railroad also has two G-E equipped 300-hp. oil-electrics in service at New York City

350-99

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The enviable records of good engineers such as Bob Butterfield are made possible by their many years experience—and good locomotives, properly maintained. Good maintenance is most essential, even for such an important, yet frequently neglected part as the superheater. To properly recondition superheaters not only experienced workmen but the proper tools are necessary to insure dependability and long life. Such men and tools are available only at the Elesco Plant.

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Robert E. Butterfield, better known as "Bob", famous engineer of the Twentieth Century and the Empire State Express on the New York Central Railroad, began his railroad work on October 8th, 1883. Now after 48 years experience he runs two of the foremost trains in the world. He is typical of the men who operate the fast trains of today.

In any field, experience is the deciding factor in determining the excellence of a product or service—all other things being equal. Intelligent repetition of operations leads towards perfection. Practice really does "make perfect".

The truth of this axiom is proved by the Elesco Unit Remanufacturing Service. For here the railroads' unserviceable superheater units are remanufactured with the same care as new superheater units. They are refabricated by the same workmen, using the same tools . . . machines . . . high-grade materials. They must pass the same final tests and inspections. The result is superheater units equal to new and capable of delivering many more years of efficient carefree service.

If repairs are attempted in a railroad shop, where not only proper facilities may be lacking but experience as well, how different is the result—improperly repaired units, which in service prove a costly experiment in efficiency and length of useful life.

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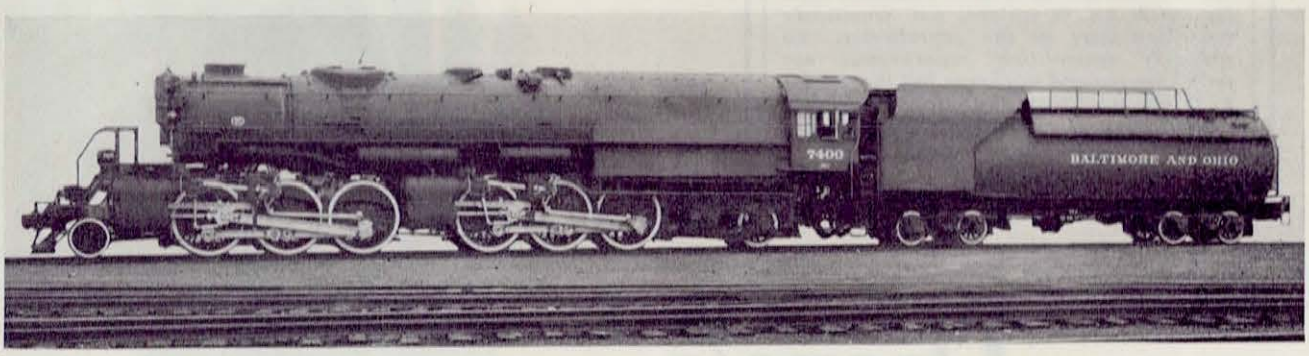

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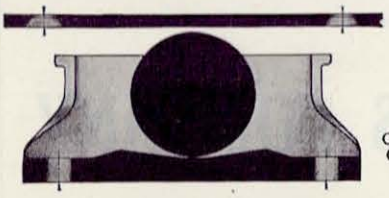

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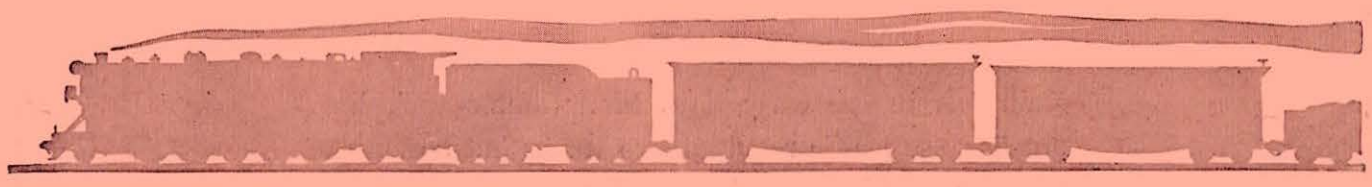
A Sure Way To Get Full Capacity

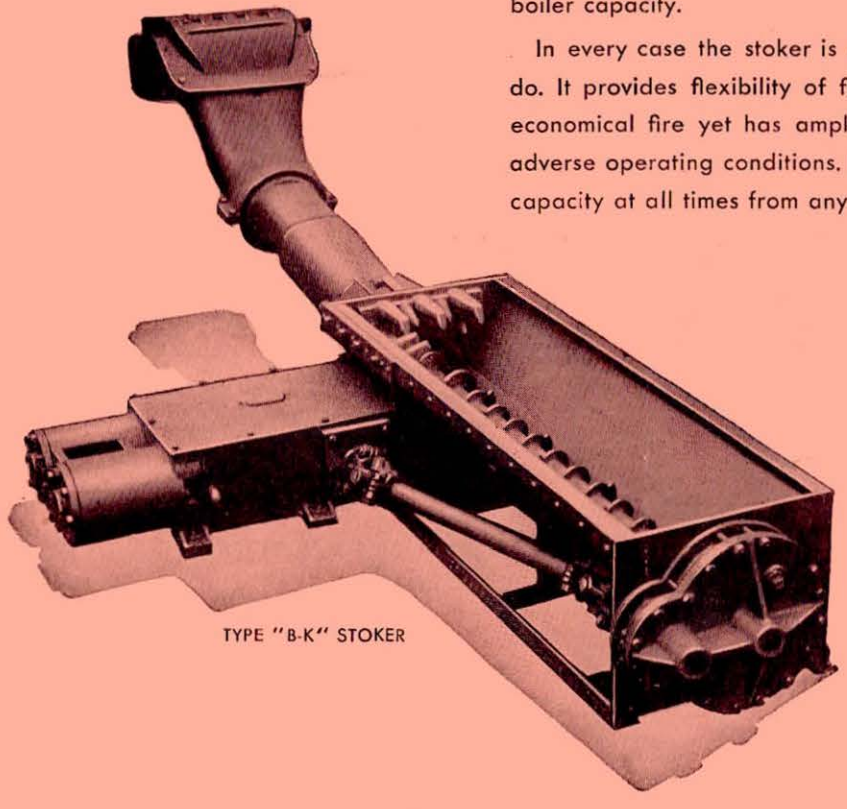


REGARDLESS of the size of the locomotive boiler and the refinements in the engine, full steaming capacity must be always available if these benefits are to be realized.

To get this, stoker firing is a necessity. It is the only means of developing full steaming capacity under all conditions of service.

Stoker firing has made possible large Mallet locomotives having a grate area of 184 sq. ft. and burning as high as 30,000 lbs. of coal per hour. It has increased the earning capacity of smaller existing power by developing the full boiler capacity.

In every case the stoker is designed for the work it has to do. It provides flexibility of firing that maintains a thin, even, economical fire yet has ample reserve capacity for the most adverse operating conditions. It is a sure way to get full boiler capacity at all times from any locomotive.



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NEW YORK CHICAGO ERIE

MAKING ONE TRACK DO THE WORK OF TWO

Railroads in the early days built double-track lines not because traffic required two tracks but because of the unavoidable delays in single-track operation.

Today by directing train movements by signal indications, delays have been eliminated and efficient and economic operation of single-track has been realized.

During the last few years many miles of double-track main lines have been converted to single-track.

The most extensive continuous section of double-track converted to single-track is on the Great Southern of Ireland, eighty miles of main line, handling a traffic of approximately twenty trains daily on the greater portion of the territory.

In its annual report, the Great Southern reported a reduction in expenditures of $893,460 in 1929 as compared with 1928 which was due in part to:

> **"eliminating non-earning portions of the company's property, that is to say, by not maintaining two lines where one . . . . more than suffices for the efficient discharge of business offered or likely to be offered."**

▼ ▼ ▼

Where traffic does not warrant the maintenance of two tracks, studies should be made to determine the economics of removing one track and providing centralized traffic control on the remaining track.

UNION SWITCH & SIGNAL COMPANY
Swissvale, Pennsylvania

GENERAL RAILWAY SIGNAL COMPANY
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79

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